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20. ABSTRACT (Continue on reverse side if necessary and identify by block number) This report provides information and analysis on the physical condition of the dam as of the report date. Information and analysis are based on visual inspection of the dam by the performing organization. The examination of documents and the visual inspection of the Court Street Dam did not reveal conditions which constitute an immediate hazard to human life or property. However, the dam		

has some deficiencies which require remedial action.

Under the conditions of flow exceeding approximately 25 percent of the PMF the capacity of the river channel itself will be exceeded. Therefore, the spillway is judged inadequate but with the understanding that this is not critical in view of the fact that the river channel will not pass the one-half PMF event without overtopping either. Hence, the hazard downstream is not significantly increased.

No stability analyses (either overturning or sliding) were deemed appropriate for the Court Street Dam since it is embedded into the underlying bedrock and the gates are below the channel bottom when open. Therefore, there are no sliding or overturning forces acting.

The dam has a number of problem areas which, if left uncorrected, have the potential for the development of hazardous conditions and must be corrected within one year. These areas are:

1. Correct concrete deterioration throughout the dam and along the east and west appurtenant structures.
2. Arrest or reduce leakage around the gate.
3. Develop and implement a detailed emergency operation-action plan and warning system.

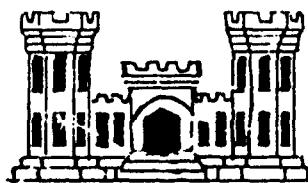
GENESEE RIVER BASIN

COURT STREET DAM

MONROE COUNTY, NEW YORK

INVENTORY NO. N.Y. 683

PHASE I INSPECTION REPORT NATIONAL DAM SAFETY PROGRAM



Prepared by
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Prepared for
DEPARTMENT OF THE ARMY
NEW YORK DISTRICT, CORPS OF ENGINEERS
NEW YORK, NEW YORK

SEPTEMBER 1980

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PREFACE

This report is prepared under guidance contained in the Recommended Guidelines for Safety Inspection of Dams, for Phase I Investigations. Copies of these guidelines may be obtained from the Office of Chief of Engineers, Washington, D.C. 20314. The purpose of a Phase I Investigation is to identify expeditiously those dams which may pose hazards to human life or property. The assessment of the general condition of the dam is based upon available data and visual inspections. Detailed investigation, and analyses involving topographic mapping, subsurface investigations, testing, and detailed computational evaluations are beyond the scope of a Phase I Investigation, however, the investigation is intended to identify any need for such studies.

In reviewing this report, it should be realized that the reported condition of the dam is based on observations of field conditions at the time of inspection along with data available to the inspection team. In cases where the reservoir was lowered or drained prior to inspection, such action, while improving the stability and safety of the dam, removes the normal load on the structure and may obscure certain conditions which might otherwise be detectable if inspected under the normal operating environment of the structure.

It is important to note that the condition of a dam depends on numerous and constantly changing internal and external conditions, and is evolutionary in nature. It would be incorrect to assume that the present condition of the dam will continue to represent the condition of the dam at some point in the future. Only through frequent inspections can unsafe conditions be detected and only through continued care and maintenance can these conditions be prevented or corrected.

Phase I inspections are not intended to provide detailed hydrologic and hydraulic analyses. In accordance with the established Guidelines, the Spillway Test flood is based on the estimated "Probable Maximum Flood" for the region (greatest reasonably possible storm runoff), or fractions thereof. Because of the magnitude and rarity of such a storm event, a finding that a spillway will not pass the test flood should not be interpreted as necessarily posing a highly inadequate condition. The test flood provides a measure of relative spillway capacity and serves as an aide in determining the need for more detailed hydrologic and hydraulic studies, considering the size of the dam, its general condition and the downstream damage potential.

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⑩ Bent L. Thomsen
Gary W. Wood

PHASE I INSPECTION REPORT

NATIONAL DAM SAFETY PROGRAM

COURT STREET DAM

Inventory Number
E.D. NO. N.Y. 683, NY 683,

MONROE COUNTY, NEW YORK

Phase I Inspection Report

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PHASE I INSPECTION REPORT
NATIONAL DAM SAFETY PROGRAM

NAME OF DAM: Court Street Dam
I. D. No. NY-683

STATE LOCATED: New York

COUNTY LOCATED: Monroe

WATERSHED: Genesee River

STREAM: Genesee River

DATES OF INSPECTION: June 12, June 27, July 15, 1980

ASSESSMENT

The examination of documents and the visual inspection of the Court Street Dam did not reveal conditions which constitute an immediate hazard to human life or property. However, the dam has some deficiencies which require remedial action.

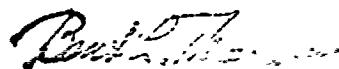
Under the conditions of flow exceeding approximately 25 percent of the PMF the capacity of the river channel itself will be exceeded. Therefore, the spillway is judged inadequate but with the understanding that this is not critical in view of the fact that the river channel will not pass the one-half PMF event without overtopping either. Hence, the hazard downstream is not significantly increased.

No stability analyses (either overturning or sliding) were deemed appropriate for the Court Street Dam since it is embedded into the underlying bedrock and the gates are below the channel bottom when open. Therefore, there are no sliding or overturning forces acting.

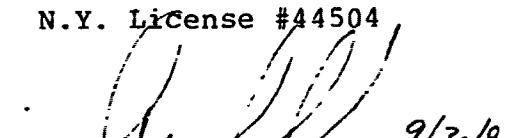
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conditions and must be corrected within one year. These areas are:

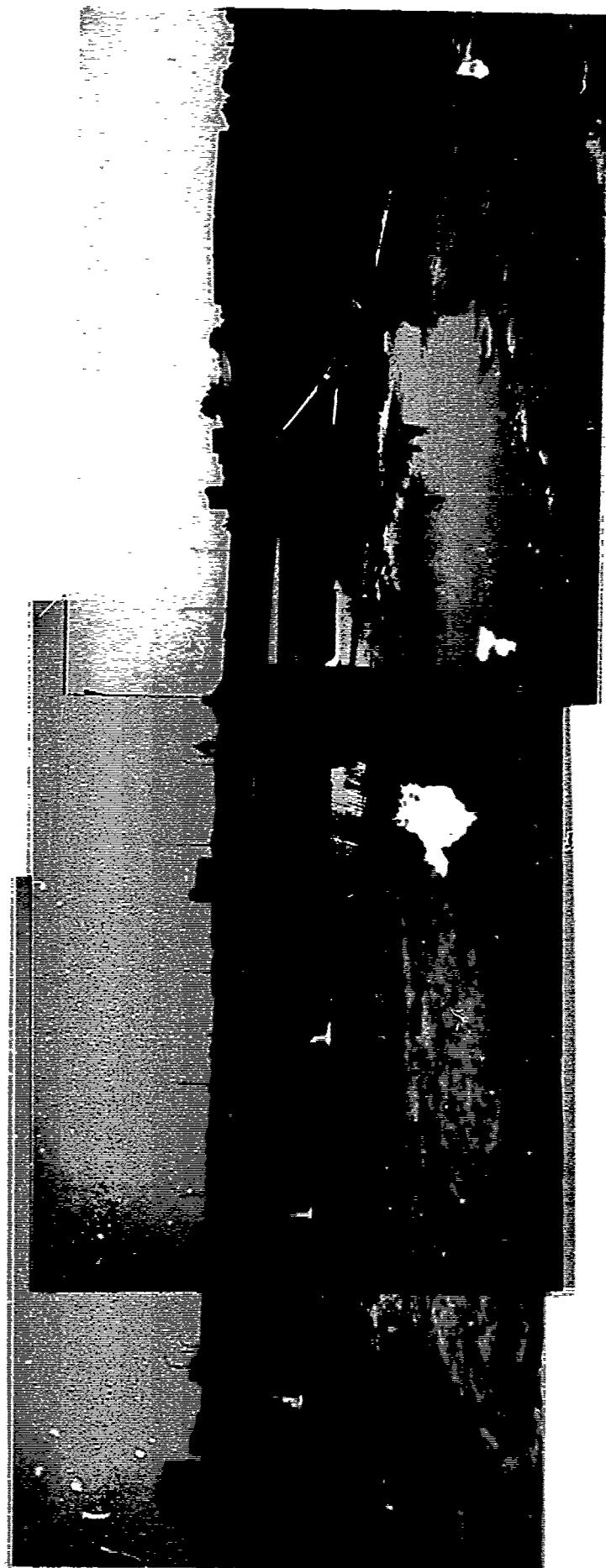
1. Correct concrete deterioration throughout the dam and along the east and west appurtenant structures.
2. Arrest or reduce leakage around the gates.
3. Develop and implement a detailed emergency operation-action plan and warning system.



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New York District Engineer

APPROVED BY



Panoramic View of
COURT STREET DAM

PHASE I INSPECTION REPORT
NATIONAL DAM SAFETY PROGRAM
COURT STREET DAM
I.D. NO. N.Y. - 683

MONROE COUNTY, NEW YORK

SECTION 1: PROJECT INFORMATION

1.1 GENERAL

a. Authority

The Phase I inspection reported herein was authorized by the Department of the Army, New York District, Corps of Engineers, to fulfill the requirements of the National Dam Inspection Act, Public Law 92-367.

b. Purpose of Inspection

This inspection was conducted to evaluate the existing conditions of the dam, to identify deficiencies and hazardous conditions, to determine if they constitute hazards to human life and property, and to recommend remedial measures where necessary.

1.2 DESCRIPTION OF PROJECT

a. Description of the Dam and Appurtenant Structures

The Court Street Dam consists primarily of 4 steel radial overflow gates, each with a maximum crest elevation of 513.1 (BCD-Barge Canal Datum). Proceeding from east to west, the gates have the following approximate widths:

Gate #1 - 53 feet

Gate #2 - 53 feet

Gate #3 - 110 feet

Gate #4 - 110 feet

Concrete piers separate the gates. There is an operating house on the pier between gates 1 and 2, and another operating house on the pier between gates 3 and 4.

The gates are supported and their levels are controlled by water pressure. A system of valves and chambers in the piers beneath the operating houses controls the water transmitted beneath the gates. For cleaning and inspection, the gates are supported in their full upright position by props.

Near the east end and upstream of the dam, there is a concrete wall equipped with 4 vertical gates. These gates are used by Rochester Gas and Electric to control a relatively small amount of flow in a channel running parallel and along the east bank of the Genesee River. This water, after being used for cooling of the city library, is returned to the Genesee River.

At the west end of the dam, Rochester Gas and Electric maintains a hydroelectric powerhouse. The intakes for this powerhouse are located just upstream of the dam. Water leaving the powerhouse flows in a channel parallel to the Genesee River, and rejoins the river north (downstream) of Court Street.

b. Location

The dam is located on the Genesee River, just south of the Court Street Bridge in the City of Rochester, New York.

c. Size Classification

The Court Street Dam has a head of approximately 19 feet. Although the storage of the dam could not be computed, it was estimated to be approximately 3,000 acre-feet (based on a length of 3 1/2 miles, an average width of 470 feet, and an average depth of 15 feet). Therefore, the dam is classified as intermediate size.

d. Hazard Classification

The dam is classified "high" hazard because of downstream structures and the potential impact on navigation on the pool behind the dam and the Barge Canal which it feeds.

e. Ownership

The Court Street Dam is owned by the New York State Department of Transportation, Waterways Maintenance Subdivision. The controlling office is located near Rochester, New York.

New York State Department of Transportation
Region 4
Canals and Waterways
Jefferson Road
Rochester, New York
Mr. Clarence Burkwit
716-442-8550

f. Purpose of the Dam

The primary purpose of the dam is to provide a navigation pool in the Genesee River and provide water supply to the Barge Canal. Secondary purposes are to provide hydroelectric power and to provide cooling water for the city library.

g. Design and Construction History

The present dam was constructed in about the year 1926.

h. Normal Operational Procedures

The water level behind the dam is maintained as nearly as possible to elevation 513.1 (BCD). Upstream gauge readings are recorded hourly.

1.3

PERTINENT DATA

a. Drainage Area (square miles) 2460+

b. Elevations (Barge Canal Datum)

Maximum Height of the Gates 513.1

Top of Dam (also upstream channel walls) 518

Design Pool 513.1

Maximum Recorded Pool 516+

Streambed at Dam Centerline 494.5+

c. Dam

Type Radial Sector Gates

Length 375'

Height of Maximum Pool 19'+

Foundation Seated in Rock

SECTION 2: ENGINEERING DATA

2.1 GEOTECHNICAL DATA

a. Geology

The Court Street Dam is situated on the Genesee River in the heart of Rochester, New York, in the Erie-Ontario Lowlands physiographic province.

Bedrock at this location consists of limestones and dolostones, with interbedded shales, of the Silurian Lockport and underlying Clinton Groups. For the purposes of a small study area these strata may be considered flatly-lying, non faulted and seismically stable.

Pleistocene glacial deposits consist of three main types. Glacial till deposited as ground moraine during advance of the Wisconsinan ice mantles bedrock and underlies most of the area. Upon retreat of the Ontario ice lobe from this region and submersion of much of the area beneath proglacial Lake Iroquois, those areas so covered became the lake floor and reflect this in their present level to gently rolling topography and fine-grained, lake-laid substrata. Lastly, drainage channels have been filled with granular outwash and alluvium associated with final glacial downwasting.

b. Subsurface Investigation

No records of subsurface investigation were available. Based upon the available plans and the site characteristics, it appears that the structure is founded on rock.

2.2 DESIGN/CONSTRUCTION RECORDS

Plans dated 1925 and 1926, and identified as "Rochester Gas and Electric, Proposed Location for Sector Type Control Gates at Court Street, Barge Canal Harbor" show the existing dam as it presently exists. Selected drawings are included in Appendix D.

2.3 OPERATION RECORDS

This site has an attendant on a continuous basis. Upstream water elevation readings are recorded hourly throughout the year. This level is maintained as nearly as possible to elevation 513.1 (BCD).

2.4 EVALUATION OF DATA

The data presented in this report was obtained during the site inspections and from the files of the New York State Department of Transportation. The information is considered adequate for Phase I inspection purposes.

SECTION 3: VISUAL INSPECTION

3.1 FINDINGS

a. General

Visual inspections of the dam and appurtenant structures were conducted on June 12, 1980, June 27, 1980, and July 15, 1980. The weather was generally fair. The upstream water elevation was approximately 513.1 (BCD) during all three inspections.

b. Dam

During the first inspection, the gates were in a normal operating condition with flow over the top and the chamber below flooded. The general condition of the concrete piers and operating houses between the gates, plus the abutments, were noted to be somewhat deteriorated. There was also some leakage noted around the gates which is the result of poorly maintained seals. These deficiencies are documented in the photographs attached as Appendix A.

The subsequent inspections were made at dates when the gates were propped in the open position for routine cleaning and maintenance (gates 1 and 2 were inspected on June 27, and the remaining gates were inspected on July 15). At this time it was possible to enter the gate recess chamber and observe the condition of the gate structures. They were found to be clean but poorly painted. There is however, little significant deterioration. It is reported that this cleaning is a routine annual operation.

These gates are operated by flooding or draining the chambers under the gates. While the system was not seen in operation, the fact that the gates were operated between visits attests to their satisfactory operating condition

c. East and West Appurtenant Structures

Concrete deterioration was noted along the east (wall, vertical gates, and channel) and west (powerhouse, intakes, and exit channel) appurtenant structures.

d. Upstream and downstream channels

The conditions of the upstream and downstream river channels appeared to be satisfactory.

3.2 EVALUATION OF OBSERVATIONS

The following deficiencies were noted:

- 1) Concrete deterioration throughout the dam
- 2) Leakage around the gates
- 3) Concrete deterioration along the east and west appurtenant structures.

SECTION 4: OPERATION AND MAINTENANCE PROCEDURES

4.1 PROCEDURE

Normal practice is to maintain the upstream water elevation as nearly as possible to elevation 513.1 (BCD). This is accomplished by manual operation and the dam is attended on an around-the-clock basis for this purpose. Records of the actual water stages are maintained by the New York State Department of Transportation.

The operation of the auxiliary gates along both sides of the upstream channel is controlled by Rochester Gas and Electric Corporation as previously noted, and their plan of operation (if any) was not considered significant to this investigation.

4.2 MAINTENANCE OF DAM

The dam is maintained by the New York State Department of Transportation. All of the gates are secured in the fully extended condition each year and the underlying recess chambers as well as the gate structures are cleaned and inspected. However, increased maintenance is required to correct concrete deterioration, and to arrest or reduce leakage around the gates.

4.3 MAINTENANCE OF EAST AND WEST APPURTEnant STRUCTURES

The east (wall, vertical gates, and channel) and west (powerhouse, intakes, and exit channel) appurtenant structures are maintained by Rochester Gas and Electric. Increased maintenance is required to correct concrete deterioration.

4.4 WARNING SYSTEM IN EFFECT

No apparent warning system is present.

4.5 EVALUATION

Additional maintenance is required to correct concrete deterioration of the concrete portions of the dam, and along the east and west appurtenant structures. In addition, leakage around the gates should be arrested or reduced, and a detailed emergency warning system should be developed.

SECTION 5: HYDROLOGIC/HYDRAULIC

5.1 DRAINAGE AREA CHARACTERISTICS

The major portion of the Genesee River basin is located in the western part of New York and it has a total drainage area of 2479 square miles. The drainage area above the Court Street Dam is approximately 2460 square miles, of which about 1075 square miles lies upstream of the Mount Morris Dam which was built and is operated for flood control by the Army Corps of Engineers. The Genesee River has a total length of about 157 river miles. It rises in the Allegheny Mountains in Potter County, Pennsylvania at an elevation of about 2400 feet, flows generally northwest to Houghton, and then generally northeast to its mouth on Lake Ontario, at an elevation of approximately 247 feet. The topography of the basin upstream of the Mount Morris Dam is steep and rugged, as compared to gently rolling terrain downstream of this dam. In Letchworth State Park, just upstream of Mount Morris Dam, the river elevation drops from 1080 feet to 768 feet, over three successive falls, flowing through a deep gorge cut in rock. The river flows through flat alluvial plains from the Village of Mount Morris to Rochester. The large tributaries to the Genesee River which enter below the Mount Morris dam are Canaseraga Creek, Honeoye Creek, Oatka Creek, Black Creek, and Conesus Creek.

5.2 ANALYSIS CRITERIA

The hydrologic analysis of this dam was performed using the Corps of Engineers HEC-1 computer program, Dam Safety Version. The spillway design flood selected for analysis was the Probable Maximum Flood (PMF) in accordance with the Recommended Guidelines of the U.S. Army Corps of Engineers.

The hydrologic analysis was performed using the unit hydrograph in the Genesee River and its major tributaries. The flood hydrographs were then routed downstream by the Modified Puls method and the Muskingum method.

The hydrologic model for the Genesee River was obtained from the U.S. Army Corps of Engineers, Buffalo District. The model, consisting of 6 hour unit hydrographs in the Genesee River at the Mount Morris Dam and its major tributaries in the lower basin, and the Muskingum routing coefficients from the outlet of the dam to the Rochester gauge in the Genesee River; was developed by the Corps of Engineers. This model was adopted for the hydrologic analysis of the Court Street Dam with minor adjustments. Unit hydrographs and routing coefficients were developed using the data from actual storms. Synthetic unit hydrographs were developed in the streams where there was lack of actual data.

The Probable Maximum Flood (PMF) was developed from the Probable Maximum Precipitation (PMP). Hydrometeorological Report No. 33 was used to obtain PMP values. The PMF hydrograph at Court Street dam was developed for the following 2 cases:

1. The Mount Morris Reservoir level at the spillway crest (elevation 760), and the Probable maximum precipitation applied to each subarea used in the analysis.
2. The Mount Morris Reservoir level at the conservation pool level (elevation 593), and the probable maximum precipitation applied to the center of the total drainage area.

Both analyses were made assuming the nine conduits in the outlet works as inoperative. The resulting peak inflows were:

<u>Case</u>	<u>1/2 PMF (cfs)</u>	<u>PMF (cfs)</u>
1	231,110	472,967
2	101,087	208,074

5.3 SPILLWAY CAPACITY

The dam has four sector gates and is a run-of-river structure. The gates are kept raised during the navigation season to maintain the elevation of the New York State Barge Canal (approximately 513.1 feet). The spillway is divided into four spans with a gate in each span. Two spans have lengths of 110 feet each and the other two have lengths of 54 feet each. A discharge coefficient of 3.1 was used to compute the discharge capacity of the spillway, with the gates assumed to be in the lowered position (i.e. maximum flow configuration). Under these conditions, the calculated capacity of the gates is 51,100 cfs with a stage at elevation 516 which is equivalent to the top of the channel sidewalls. Beyond this depth, the concept of weir flow is not applicable.

5.4 RESERVOIR CAPACITY

The reservoir storage above the top of the dam is not applicable. The reservoir elevation is regulated by raising and lowering the gates. The effective storage is the storage in the channel of the Genesee River which extends several miles above the dam with a channel width of 250 feet to 450 feet.

5.5 FLOODS OF RECORD

The maximum discharge recorded at the U.S.G.S. gauging station at Rochester, approximately 2.5 miles upstream of the dam, was 48,300 cfs in March of 1916. The elevation of the flood water was 519.15. Since the construction of the Mount Morris Dam in 1952, the flows have been regulated to prevent flooding in the lower basin. A discharge of 29,600 cfs was recorded at the gauge in June 1972 while the peak inflow to the Mount Morris reservoir was estimated at 91,350 cfs.

5.6 OVERTOPPING POTENTIAL

The hydrologic analyses were based upon the condition of having all gates completely lowered. In such a situation, the concept of overtopping the dam, per se, becomes meaningless. However, it is noteworthy that the top of channel walls would be overtopped by all flows in excess of approximately 25 percent of the PMF. The depth of this overtopping could not be calculated because of the inapplicability of the calculation procedure as described in Section 5.3.

5.7 EVALUATION

Under the conditions of flow exceeding approximately 25 percent of the PMF the capacity of the river channel itself will be exceeded. Therefore, the spillway is judged inadequate but with the understanding that this is not critical in view of the fact that the river channel will not pass the one-half PMF event either without overtopping. Hence, the hazard downstream would not be significantly increased by overtopping of the dam.

SECTION 6: STRUCTURAL STABILITY

6.1 EVALUATION OF STRUCTURAL STABILITY

a. Visual Observations

No visible evidence of structural instability was noted. The horizontal and vertical alignments, abutments, water passages, and joints in the concrete work all appeared to be satisfactory. The concrete deterioration and leakage noted in the visual inspection has not yet affected the structural stability.

b. Stability Evaluation

No stability analyses (either overturning or sliding) were deemed appropriate for the Court Street Dam since the gate chambers are embedded into the underlying bedrock. Therefore, there are no sliding or overturning forces acting on the structure when the gates are open (except for the narrow piers located between gates).

SECTION 7: ASSESSMENT/RECOMMENDATIONS

7.1 ASSESSMENT

a. Safety

The Phase I inspection of the Court Street Dam did not reveal conditions which constitute an immediate hazard to human life or property. However, increased maintenance is required to correct concrete deterioration and to arrest or reduce leakage around the gates.

Since the spillway does not have sufficient discharge capacity for passing one-half the PMF, it is considered to be inadequate. However, this is not considered to be a serious deficiency since the river channel will also be exceeded and there is no increased hazard downstream caused by spillway limitations.

During periods of unusually heavy precipitation and high runoff occurring over the watershed, continuous surveillance should be provided both at the dam and in the downstream areas to warn of high floodwater conditions. Such surveillance procedures, and such other measures as may be deemed necessary should be developed, documented and placed in readiness for future use as part of a detailed emergency operation-action plan. A warning system should also be developed and implemented.

b. Adequacy of Information

The information available for preparation of the report is considered adequate for a Phase I investigation.

c. Necessity for Additional Investigations

No additional investigations are deemed necessary at this time.

d. Urgency

The deficiencies noted in this investigation should be corrected within twelve (12) months of the date of notification of the owner.

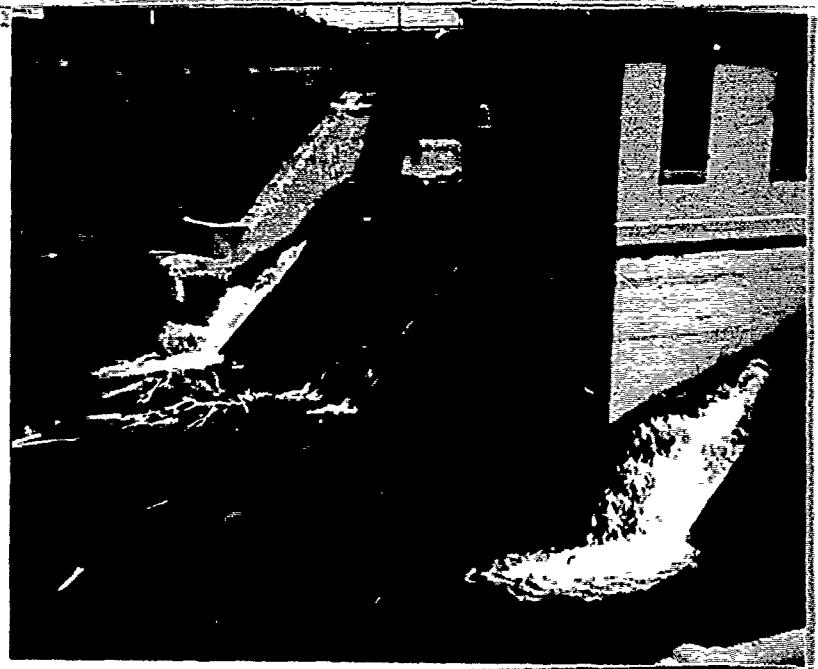
7.2 RECOMMENDED MEASURES

The following actions should be undertaken:

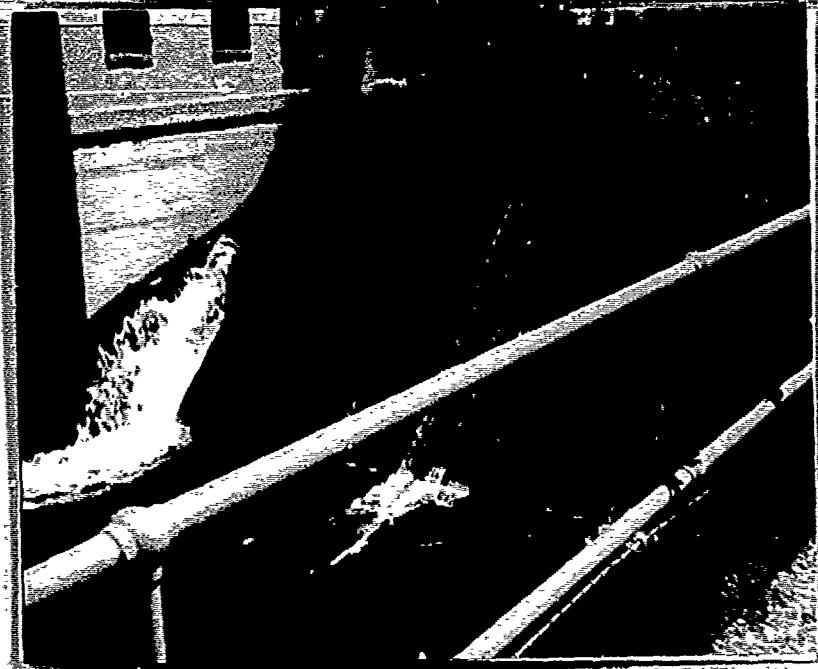
- a) Correct concrete deterioration throughout the dam and along the east and west appurtenant structures.
- b) Arrest or reduce leakage around the gates.
- c) Develop and implement a detailed emergency operation-action plan and warning system.

APPENDIX A

PHOTOGRAPHS



Gate #1;
NOTE: Concrete deterioration
and leakage



Gate #2;
NOTE: Leakage

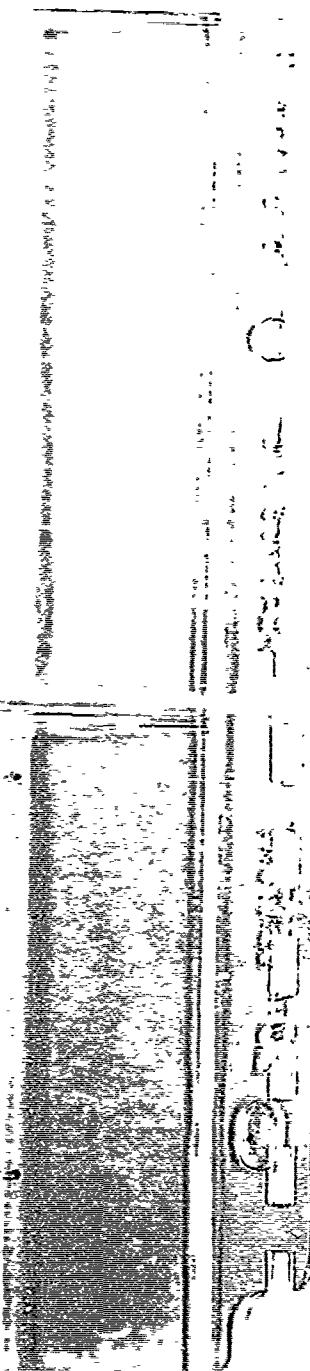


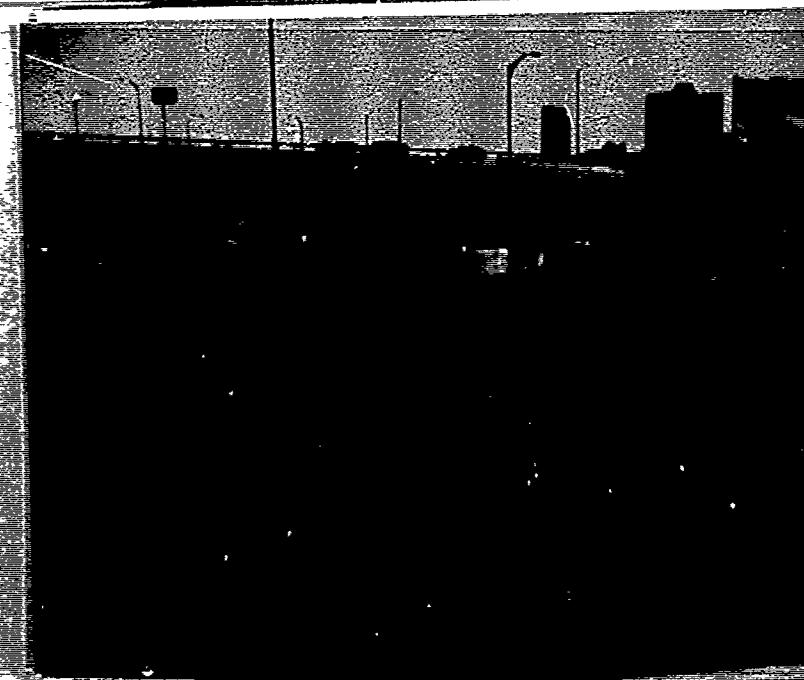
Gate #3;
NOTE: Leakage

Upstream of Gate #1;
NOTE: Concrete deterioration



Gate #4;
NOTE: Leakage





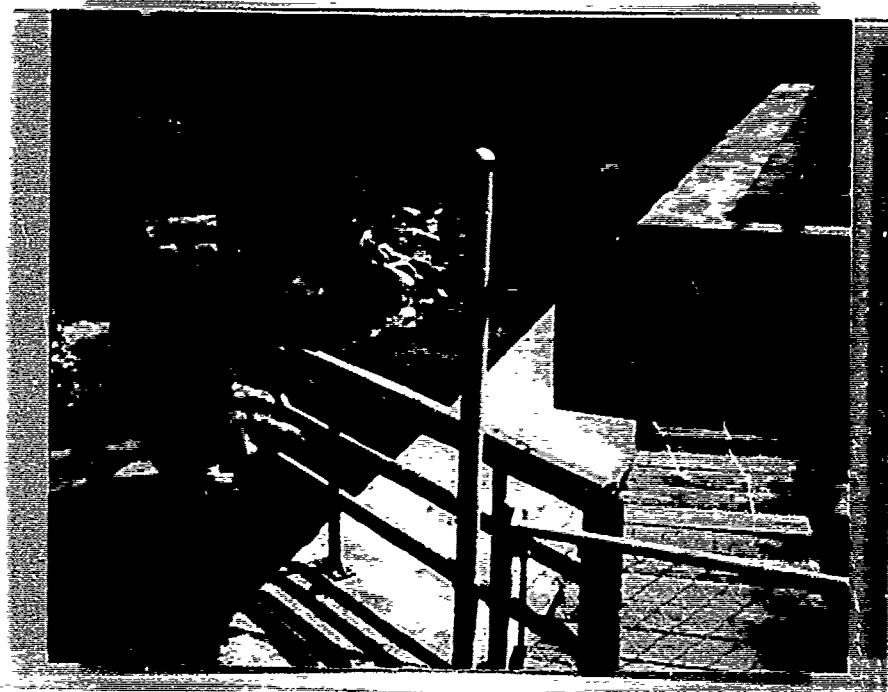
Upstream of Gate #3;

NOTE: Concrete deterioration

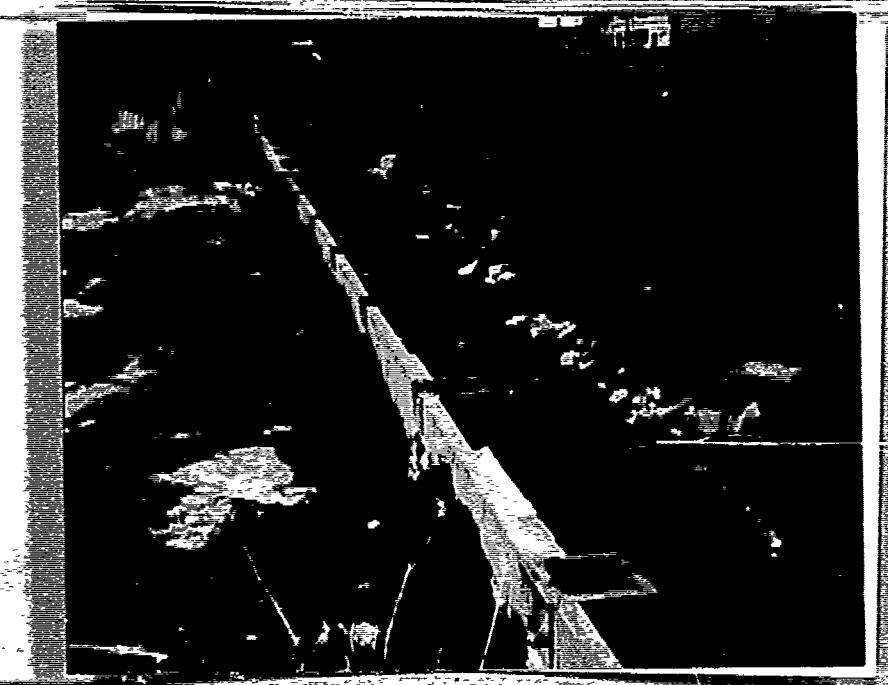
Upstream of Gate #4

Gates east and upstream of
Dam

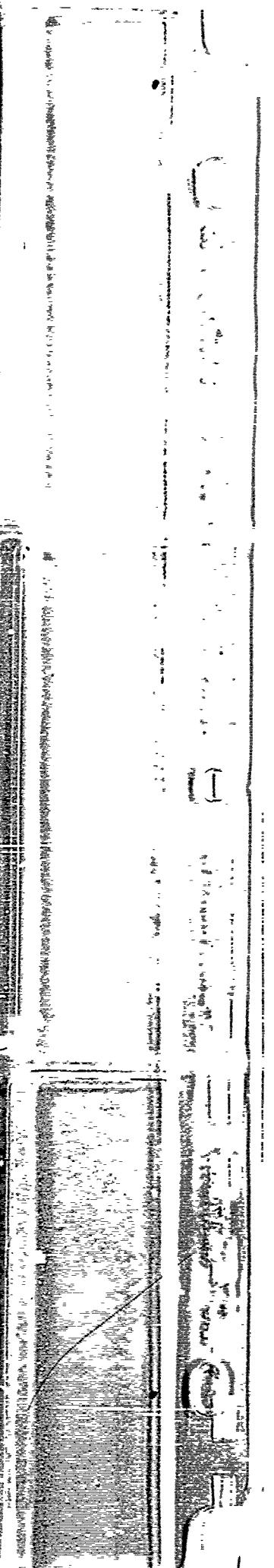
Channel east of Dam, facing upstream

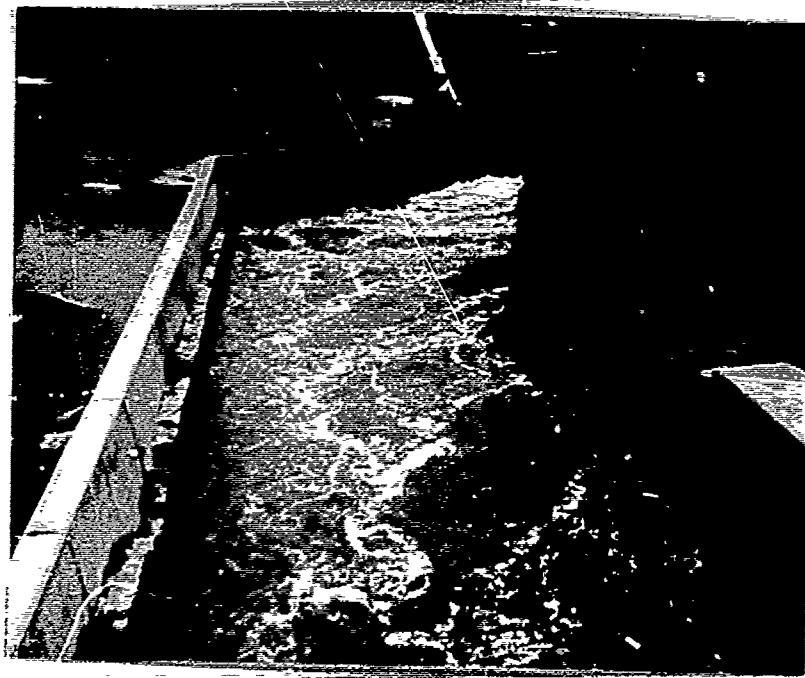


Channel east of Dam, facing downstream

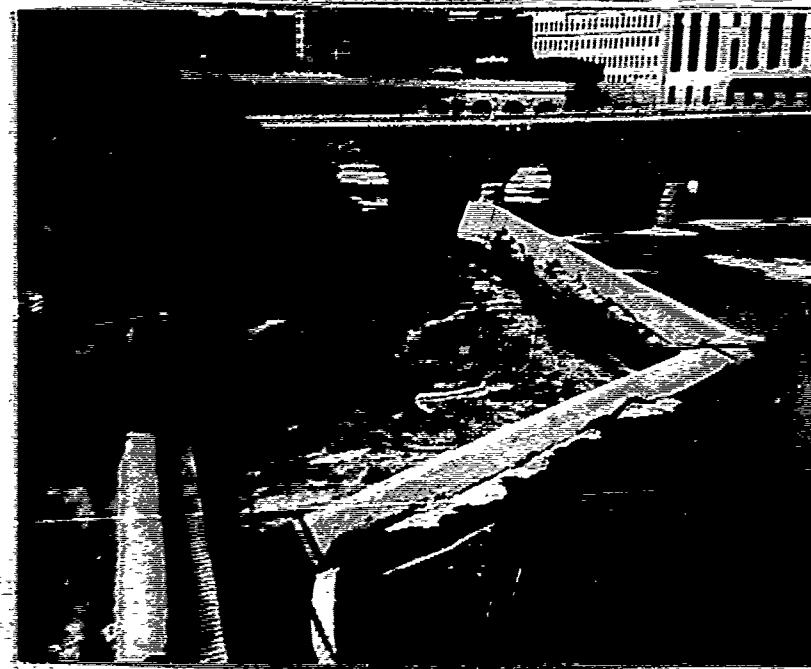


Powerhouse intakes, west and upstream of Dam

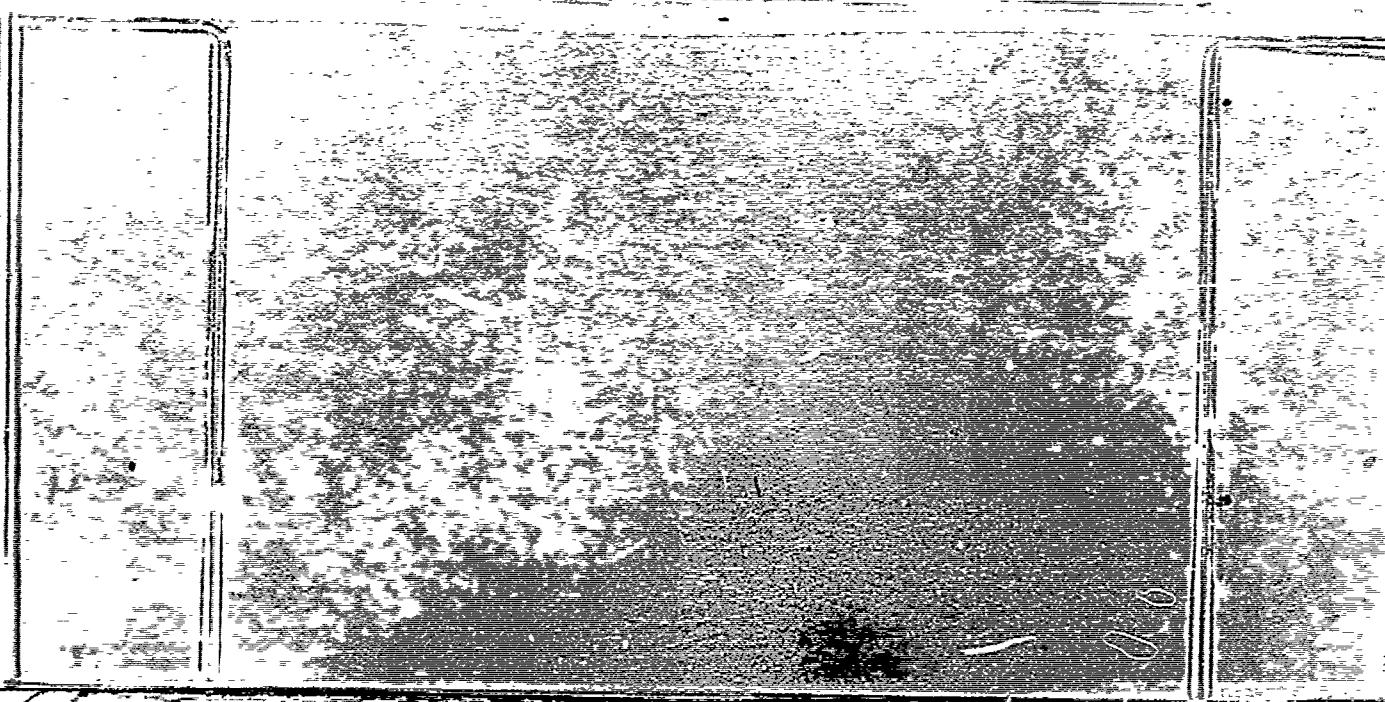




Powerhouse exit channel,
facing upstream



Powerhouse exit channel,
facing downstream



APPENDIX B

VISUAL INSPECTION CHECKLIST

THOMSEN ASSOCIATES

CONSULTING GEOTECHNICAL ENGINEERS & GEOLOGISTS

VISUAL INSPECTION CHECKLIST

1) Basic Data

a. General

Name of Dam Court Street Dam
I.D. # 42R-23 DEC. Dam No. 683

River Basin GENESEE RIVER

Location: Town ROCHESTER County MONROE
U.S.G.S. Quadrangle ROCHESTER EAST

Stream Name GENESEE RIVER

Tributary of Lake Ontario

Latitude (N) 43° 9' Longitude (W) 170° 36' 30"

Type of Dam 4 Gates

Hazard Category HIGH 7/15/80

Date(s) of Inspection 6/12/80, 6/27/89 (FATES 1+2)

Weather Conditions Sunny

Reservoir Level at Time of Inspection 575.7
Tailwater Level at Time of Inspection 574.5

b. Inspection Personnel *See Figure (TA)*

P 11 (2013)

C. Persons Contacted (Including Address & Phone No.)

Persons contacted (including names & phone no.): LORENCE RUCKER 11803 (716-442-5550)

PIERRE BAGLEY 1145-207 (714-442-8550)

3. [View answer](#)

Date Constructed 1936 Date(s) Reconstructed

Designer *PF-F*

Constructed by Reet

Owner PASSENGER 1175D97

e. Seismic Zone W

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CONSULTING GEOTECHNICAL ENGINEERS & GEOLOGISTS

VISUAL INSPECTION CHECKLIST

2) Embankment

a. Characteristics

1) Embankment Material: CONCRETE & METAL DAM

2) Cutoff Type None

3) Impervious Core N. A.

4) Internal Drainage System NONE

5) Miscellaneous _____

b. Crest

1) Vertical Alignment Good

2) Horizontal Alignment Good

3) Surface Cracks None Noted

4) Miscellaneous _____

c. Upstream Slope

1) Slope (Estimate) (V:H) N. A.

2) Undesirable Growth or Debris, Animal Burrows N. A.

3) Sloughing, Subsidence or Depressions N. A.

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CONSULTING GEOTECHNICAL ENGINEERS & GEOLOGISTS

VISUAL INSPECTION CHECKLIST

4) Slope Protection N. A.

5) Surface Cracks or Movement at Toe N. A.

d. Downstream Slope

1) Slope (Estimate - V:H) N. A.

2) Undesirable Growth or Debris, Animal Burrows N. A.

3) Sloughing, Subsidence or Depressions N. A.

4) Surface Cracks or Movement at Toe N. A.

5) Seepage UNOBSERVABLE

6) External Drainage System (Ditches, Trenches; Blanket)

N. A.

7) Condition Around Outlet Structure N. A.

8) Seepage Beyond Toe N. A.

e. Abutments-Embankment Contact

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CONSULTING GEOTECHNICAL ENGINEERS & GEOLOGISTS

VISUAL INSPECTION CHECKLIST

1) Erosion at Contact None NOTED

2) Seepage Along Contract None NOTED

3) Drainage System

a. Description of System N.A.

b. Condition of System N.A.

c. Discharge from Drainage System N.A.

4) Instrumentation (Monumentation/Surveys, Observation Wells, Weirs, Piezometers, Etc.)

WATER LEVEL AND GATE LEVEL
GAUGES IN OPERATING HOUSE.

WATER LEVEL GAUGES ARE OPERATED
BY FLOATS.

GAUGES READ HOURLY.

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VISUAL INSPECTION CHECKLIST

5) Reservoir

a. Slopes GENERALY GOOD

b. Sedimentation UNOBSERVABLE

c. Unusual Conditions Which Affect Dam LARGE TREES
PERIODICALLY REMOVED

6) Area Downstream of Dam

a. Downstream Hazard (No. of Homes, Highways, etc.) URBAN AREA

b. Seepage, Unusual Growth NONE NOTED

c. Evidence of Movement Beyond Toe of Dam None

d. Condition of Downstream Channel GOOD

7) Spillway(s) (Including Discharge Conveyance Channel)

a. General SPILLWAY IS SPILLING OVER
GATES

b. Condition of Service Spillway APPEARS GOOD

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VISUAL INSPECTION CHECKLIST

c. Condition of Auxiliary Spillway V.A.

d. Condition of Discharge Conveyance Channel Good

8) Reservoir Drain/Outlet N. A.

Type: Pipe _____ Conduit _____ Other _____

Material: Concrete _____ Metal _____ Other _____

Size: _____ Length _____

Invert Elevations: Entrance _____ Exit _____

ysical Condition (Describe): Unobservable _____

Material: _____

Joints: _____ Alignment _____

Wadsworth's Capacitors

Means of Control: Gate Valve Uncontrolled

Operation: Operable Inoperable Other

Present Condition (Describe):

THOMSEN ASSOCIATES

CONSULTING ENGINEERS, INC.

9) Structural

a. Concrete Surfaces Some Deterioration

b. Structural Cracking None noted

c. Movement - Horizontal & Vertical Alignment (Settlement)
None noted

d. Junctions with Abutments or Embankments
Area 6000

e. Drains - Foundation, Joint, Face N. A.

f. Water Passages, Conduits, Sluices Emergency 6000

g. Seepage or Leakage Some noted beneath gates

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h. Joints - Construction, etc. APPEAR GOOD

i. Foundation UNOBSERVABLE

j. Abutments APPEAR GOOD

k. Control Gates APPEAR GOOD

l. Approach & Outlet Channels GOOD

m. Energy Dissipators (Plunge Pool, etc.) N. A.

n. Intake Structures THE VALVES OPERATIONAL

o. Stability

p. Miscellaneous

APPENDIX C

HYDROLOGIC/HYDRAULIC: ENGINEERING DATA AND COMPUTATIONS

THOMSEN ASSOCIATES

CHEK LIST FOR DAMS
HYDROLOGIC AND HYDRAULIC
ENGINEERING DATA

AREA-CAPACITY DATA:

	<u>Elevation</u> (ft.)	<u>Surface Area</u> (acres)	<u>Storage Capacity</u> (acre-ft.)
1) Top of Dam	<u>513.1</u>	—	—
2) Design High Water (Max.Design Pool)	<u>516±</u>	—	—
3) Auxiliary Spillway Crest	<u>N.A.</u>	<u>N.A.</u>	<u>N.A.</u>
4) Pool Level with Flashboards	<u>N.A.</u>	<u>N.A.</u>	<u>N.A.</u>
5) Service Spillway Crest	<u>N.A.</u>	<u>N.A.</u>	<u>N.A.</u>

DISCHARGES

	<u>Volume</u> (cfs)
1) Average Daily	—
2) Spillway @ Maximum High Water	—
3) Spillway @ Design High Water	—
4) Spillway @ Auxiliary Spillway Crest Elevation	<u>N.A.</u>
5) Low Level Outlet	<u>N.A.</u>
6) Total (of all facilities) @ Maximum High Water	—
7) Maximum Known Flood	<u>29,600</u>

THOMSEN ASSOCIATES

CONSULTING ENGINEERS

OUTLET STRUCTURES/EMERGENCY DRAWDOWN FACILITIES:

Type: Gate X Sluice _____ Conduit _____ Penstock _____
Shape: RADIAL Sector Gates
Size: Approx. 15' HIGH, APPROX. 110' AND 53' WIDE
Elevations: Entrance Invert VARIABLE
Exit Invert APPROX. 494.5
Tailrace Channel: Elevation APPROX. 494.5

HYDROMETEROLOGICAL GAGES:

Type: FLOAT
Location: OPERATING HOUSES
Records:
Date - _____
Max. Reading - 516 ±

FLOOD WATER CONTROL SYSTEM:

Warning System: Full-Time Operator (24 Hr./Day).
No Formal Warning System.

Method of Controlled Releases (mechanisms):

THOMSEN ASSOCIATES

301 N. STATE ST., SUITE 1000, CHICAGO, ILLINOIS 60601

CREST:

ELEVATION: 513.1

Type: GATES

Width: N. A.

Length: Approx. 325'

Spillover All Gates

Location _____

SPILLWAY:

PRINCIPAL

513.1

Elevation

GATES

Type

Approx. 325'

Width

EMERGENCY

N. A.

Type of Control

Uncontrolled

Controlled:

GATES

Type

(Flashboards; gate)

4

Number

2@15'x110', 2@15'x53'

Size/Length

Invert Material

Anticipated Length
of operating service

N. A.

Chute Length

N. A.

Height Between Spillway Crest
& Approach Channel Invert
(Weir Flow)

McFarland-Johnson Engineers, Inc.
171 Front Street
BINGHAMTON, NEW YORK 13905

JOB MT. MORRIS - JULY 1948

SHEET NO. _____ OF _____

CALCULATED BY _____ DATE _____

CHECKED BY _____ DATE _____

SCALE _____

STORAGE - OUTFLOW-ELEVATION RELATION FOR MT. MORRIS DAM

ELEV. IN FT. U.S.C&G.S.	STORAGE IN ACRE-FT.	OUTFLOW IN C.F.S.	REMARKS
598	4660	0	Conservation Pool
760	337,400	0	Spillway Crest
768	364,300	41,500	
772	377,700	78,500	
776	391,100	126,000	
780	405,000	182,000	
784	417,900	247,000	
788	431,300	318,000	
790	439,300	357,000	
792	444,700	402,000	Top of dam
794	451,400	447,000	

NOTE: Above information was obtained from Corps of Engineers, Buffalo District. Conduits in the outlet works were assumed inoperative. During the period of 15th June to 1st November, a pool elevation of 598, known as Conservation Pool is maintained. At other times, run-of-the-river levels prevail in the reservoir. However, when river flows exceed the natural capacity of the downstream channel, flood waters are stored.

McFarland-Johnson Engineers, Inc.
171 Front Street
BINGHAMTON, NEW YORK 13905

JOB HYD-1000 SHEET 1 OF 1

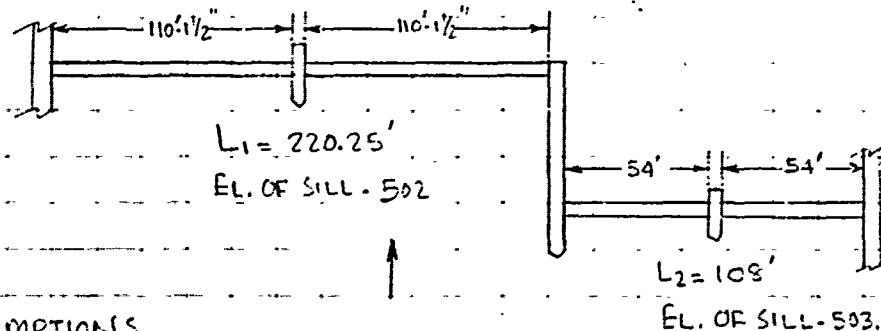
SHEET NO. _____ OF _____

CALCULATED BY P.S. DATE 5/10/71

CHECKED BY _____ DATE _____

SCALE

STAGE-DISCHARGE COMPUTATIONS (COURT STREET DAM)

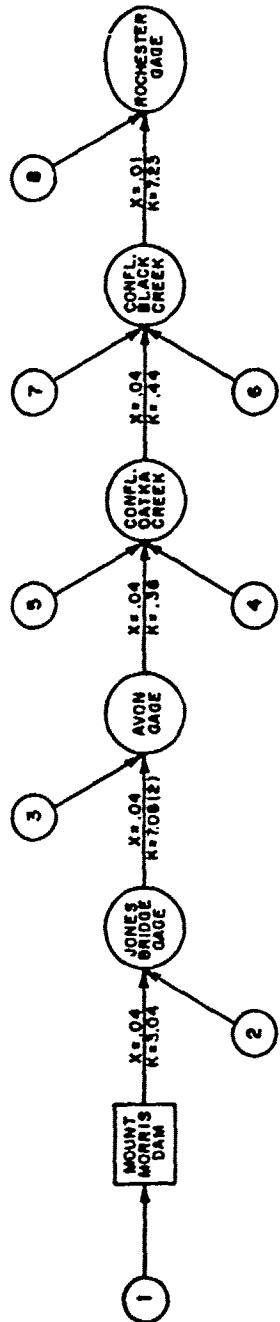


ASSUMPTIONS

- ① All four gates are lowered.
- ② Coefficient of discharge = 3.1
- ③ $Q = C_L H^{3/2}$

ELEV.	H_1	$H_1^{3/2}$	H_2	$H_2^{3/2}$	L_1	L_2	Q_1	Q_2	TOTAL
502	0	0	0	0	220.25	108	0	0	0
503	1	1	0	0	"	"	683	0	683
504	2	2.83	.8	.71	"	"	1932	238	2170
515	3	5.19	1.8	2.41	"	"	3543	807	4350
506	4	8.0	2.8	4.68	"	"	5462	1566	7028
507	5	11.18	3.8	7.40	"	"	7633	2477	10,110
508	6	14.69	4.8	10.51	"	"	10,030	3515	13,545
509	7	18.52	5.8	13.97	"	"	12,645	4677	17,322
510	8	22.62	6.8	17.73	"	"	15,444	5936	21,380
511	9	27.0	7.8	21.78	"	"	18,435	7292	25,727
512	10	31.62	8.8	26.10	"	"	21,589	8738	30,327
513	11	36.48	9.8	30.68	"	"	24,909	10,271	35,180
514	12	41.57	10.8	35.5	"	"	28,393	11,885	40,262
515	13	46.87	11.8	40.53	"	"	32,002	13,569	45,571
516	14	52.38	12.8	45.79	"	"	35,764	15,320	51,094

SCHEMATIC DIAGRAM OF HYDROLOGIC MODEL
 WITH 6-HOUR UNITGRAPHS AND MUSKINGUM ROUTING COEFFICIENTS



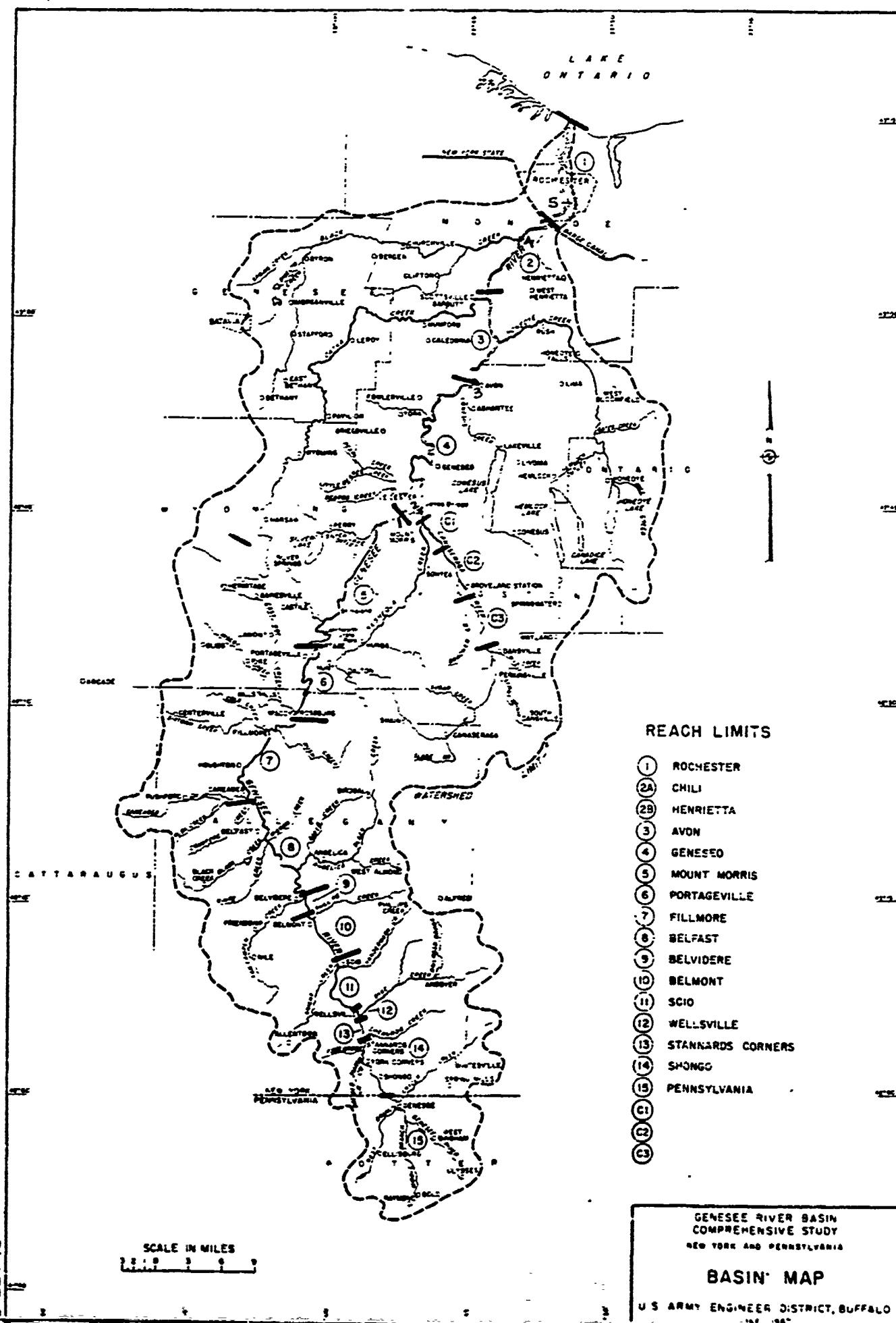
RUNOFF DISTRIBUTION IN THOUSANDS OF C.F.S.

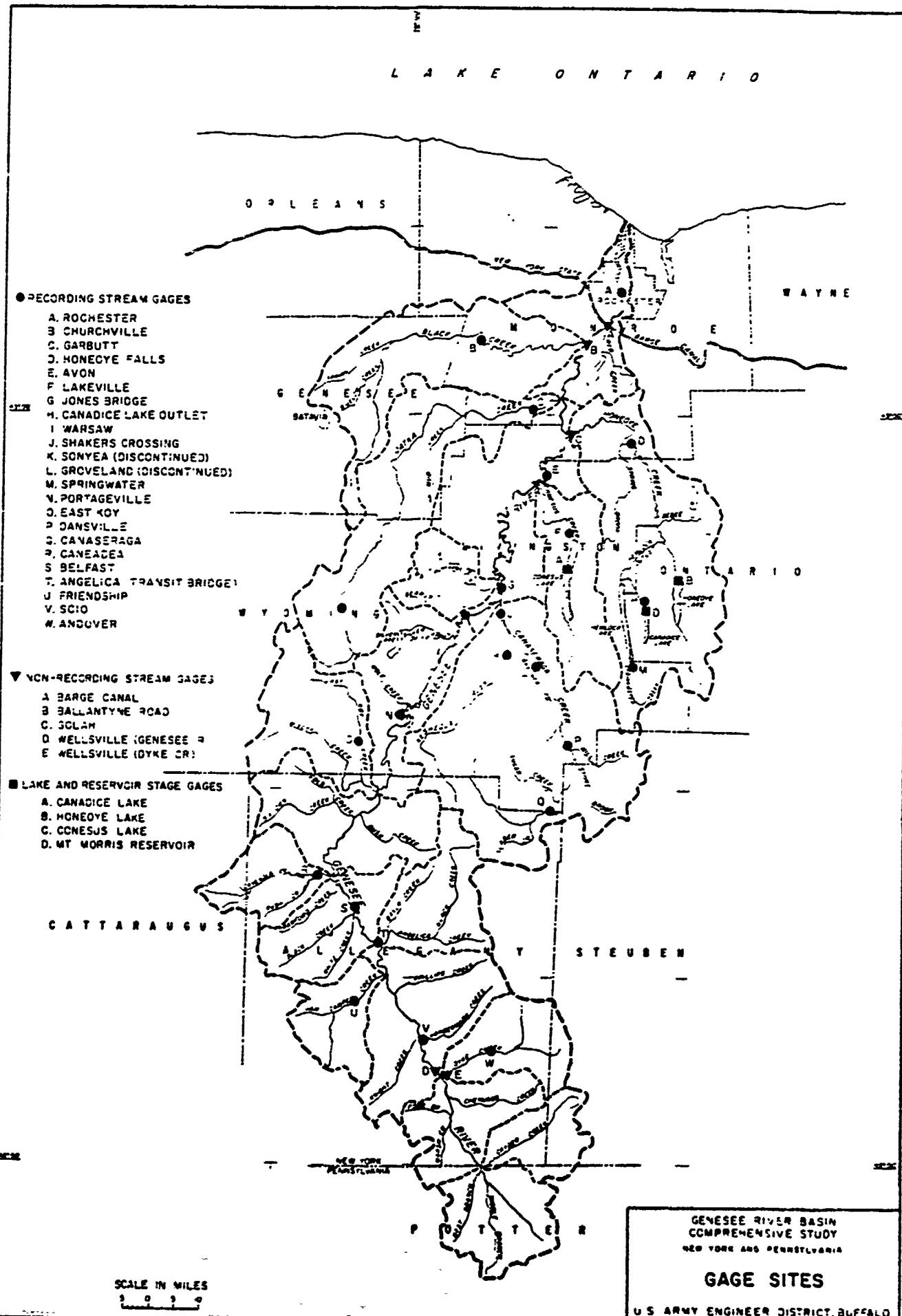
HOURS DA. ABOVE DAM	2 CANABEAGA, DA = 335 SQ. MI.		3 LOCAL + 18 DA = 178 SQ. MI.		4 HONEOYE DA = 280 SQ. MI.		5 CATTARAUGUS, DA = 215 SQ. MI.		6 LOCAL DA = 71 SQ. MI.		7 CATTARAUGUS, DA = 187 SQ. MI.		8 BLACK, DA = 100 SQ. MI.	
	DA	DA	DA	DA	DA	DA	DA	DA	DA	DA	DA	DA	DA	DA
6	4.9	1.3	0.9	0.7	0.5	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4
12	1.3	0.2	0.1	0.2	0.1	0.1	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
18	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
24	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
30	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
36	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
42	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
48	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
54	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
60	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
66	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
72	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
78	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
84	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

D.A. C. CONWY 5.1.1.01
 : 2460 - 1.00

GENESEE RIVER, MOUNT MORRIS, N.Y.
 MOUNT MORRIS RESERVOIR
 SCHEMATIC DIAGRAM
 OF HYDROLOGIC MODEL
 U.S. ARMY ENGINEER DISTRICT BUFFALO

PLATE 43





FHJUJ HYDROGRAPH PACKAGE (HC-1)
DAM SAFETY VERSION JULY 1975
LAST AUDITATION 26 Feb 79

1 A GENESEE RIVER BASIN
2 A HYDROLOGIC-HYDRAULIC ANALYSIS OF SAFETY OF COURT STREET DAM
3 A RATIOS OF PMS ROUTED THROUGH THE RESERVOIR
4 B 5u 6 6 0 0 0 0 0 0 0 0
5 b1 5
6 J 1 0 1
7 J1 .2 .35 .5 .65 .8 1
8 K 0 1 .9 0 0 0 0 1
9 K1 GENESEE RIVER INFLOW HYDROGRAPH AT MOUNT MORRIS DAM
10 M 1 -1 1975 .0 1075 0 0 0 1 0
11 P 0 22.5 52 65 73 84
12 T 0 0 0 0 0 0 1 .1 0 0
13 U 14
14 U1 4900 13400 23600 24900 17000 8400 5600 4300 3400 2700
15 U1 2100 1600 1300 1900
16 X -1 -.1 2
17 K 1 2 0 0 0 0 0 1
18 K1 ROUTING OF INFLOW HYDROGRAPH USING MODIFIED PULS METHOD
19 Y 0 0 0 1 1
20 f1 1 0 0 0 0 0 337400
21 Y2 4660 22500 50000 120000 337400 364300 377700 391100 405000 417900
22 Y2431300 438000 444700 451400
23 Y3 0 0 0 0 0 41500 78500 126000 162000 247000
24 Y3318000 359000 402000 447000
25 K 0 2 0 0 0 0 0 1 0 0 0
26 K1 CANASERAGA CREEK INFLOW HYDROGRAPH AT JONES BRIDGE GAGE
27 M 1 -1 335 0 335 0 0 0 1 0
28 P 0 22.1 73 83 93 103
29 T 0 0 0 0 0 0 1 .1 0 0
30 U 11
31 U1 2500 7800 8200 6000 4000 2800 1900 1300 800 500
32 U1 200
33 X -1 -.1 2
34 K 2 2 0 0 0 0 0 1 0 0 0
35 K1 COMBINE OUTFLOW-MOUNT MORRIS DAM AND CANASERAGA CREEK INFLOW
36 K 1 3 0 0 0 0 1 0 0 0 0
37 K1 ROUTE COMBINE FLOWS TO AVON GAGE USING MUSKINGUM METHOD
38 Y 0 0 0 0 1
39 Y1 2 0 0 7.06 .04 0 0
40 K 0 3 0 0 0 0 1 0 0 0 0
41 K1 LOCAL INFLOW HYDROGRAPH AT AVON GAGE
42 M 1 -1 250 0 256 0 0 0 1 0
43 P 0 22 77 87 97 107
44 T 0 0 0 0 0 0 1 .1 0 0
45 U 10
46 U1 1000 4700 5100 3400 2200 1500 900 500 200 100
47 X -1 -.1 2
48 K 2 3 0 0 0 0 1 0 0 0 0
49 K1 COMBINE FLOWS AT AVON GAGE
50 K 1 4 0 0 0 0 0 1

51 ROUTE FLOWS TO CONFLUENCE OF BLACK CREEK BY LAGGING FLOWS
 52 1 0 0 0 1
 53 1 0 0 1 0 0 0 0
 54 K 0 4 0 0 0 0 0 1 0 0 0 0
 55 K1 NARROW CREEK INFLOW HYDROGRAPH
 56 M 1 -1 200 0 260 0 0 0 0 1 0 0 0
 57 P 0 21.5 77 57 97 107 0 0 0 0 1 0 0
 58 R 0 0 0 0 0 0 0 1 .1 0 0 0
 59 U 12
 60 U1 100 500 3000 6300 5600 3000 2400 1700 1300 1000
 61 U1 700 400
 62 X -1 -.1 2
 63 K 0 4 0 0 0 0 0 1 0 0 0 0
 64 K1 OAIRKA CREEK INFLOW HYDROGRAPH
 65 M 1 -1 215 0 215 0 0 0 0 1 0 0 0
 66 P 0 21.8 78 88 98 108 0 0 0 0 1 0 0
 67 I 0 0 0 0 0 0 0 1 .1 0 0 0
 68 U 12
 69 U1 100 400 1200 2800 4200 4200 3000 2100 1500 1100
 70 U1 800 500
 71 X -1 -.1 2
 72 K 0 4 0 0 0 0 0 1 0 0 0 0
 73 K1 LOCAL INFLOW HYDROGRAPH
 74 M 1 -1 71 0 71 0 0 0 0 1 0 0 0
 75 P 0 21.5 92 102 113 124 0 0 0 0 1 0 0
 76 I 0 0 0 0 0 0 0 1 .1 0 0 0
 77 U 8
 78 U1 400 2400 2300 1200 700 400 200 100
 79 X -1.5 -.1 2
 80 K 0 4 0 0 0 0 0 1 0 0 0 0
 81 K1 BLACK CREEK INFLOW HYDROGRAPH
 82 K -1 -1 107 0 187 0 0 0 0 1 0 0 0
 83 P 0 21.6 81 91 101 112 0 0 0 0 1 0 0
 84 I 0 0 0 0 0 0 0 1 .1 0 0 0
 85 U 12
 86 U1 100 400 900 1300 1700 2300 2600 3100 2600 2000
 87 U1 1400 900
 88 X -1 -.1 2
 89 K 5 4 0 0 0 0 0 1 0 0 0 0
 90 K1 COMBINE FLOWS AT CONFLUENCE OF BLACK CREEK
 91 K 1 5 0 0 0 0 0 1 0 0 0 0
 92 K1 ROUTE COMBINE FLOWS TO COURT STREET DAM OUTLET USING MUSKINGUM METHOD
 93 Y 0 0 0 0 1
 94 Y1 1 0 0 6.93 .01
 95 K 0 5 0 0 0 0 0 1 0 0 0 0
 96 K1 LOCAL INFLOW HYDROGRAPH AT OUTLET OF COURT STREET DAM
 97 M 1 -1 61 0 61 0 0 0 0 1 0 0 0
 98 P 0 21.5 94 104 116 126 0 0 0 0 1 0 0
 99 T 0 0 0 0 0 0 0 1 .1 0 0 0
 100 U 8

101	01	1500	2800	1100	600	400	200	100	100	
102	X	-2	-1	2						
103	X	2	5	0	0	0	0	1	0	
104	X1	TOTAL DUMPLOAD AT COURT STREET DAY								
105	X	99								0



PREVIEW OF SEQUENCE OF STREAM NETWORK CALCULATIONS

RUNOFF HYDROGRAPH AT	1
RJUIE HYDROGRAPH TO	2
RUNOFF HYDROGRAPH AT	2
COMBINE 2 HYDROGRAPHS AT	2
RJUIE HYDROGRAPH TO	3
RUNOFF HYDROGRAPH AT	3
COMBINE 2 HYDROGRAPHS AT	3
RJUIE HYDROGRAPH TO	4
RUNOFF HYDROGRAPH AT	4
COMBINE 5 HYDROGRAPHS AT	4
RJUIE HYDROGRAPH TO	5
RUNOFF HYDROGRAPH AT	5
COMBINE 2 HYDROGRAPHS AT	5
END OF NETWORK	



FLDUD HYDROGRAPH PACKAGE (HEC-1)
DAM SAFETY VERSION JULY 1970
LAST MODIFICATION 26 Feb 79

TIME OF EXECUTION 20-AUG-80 11:35:23

GENESEE RIVER BASIN
HYDROLOGIC-HYDRAULIC ANALYSIS OF SAFETY OF COURT STREET DAM
RATIOS OF PMS ROUTED THROUGH THE RESERVOIR

NO	NMR	NMIN	JOB SPECIFICATION						NSTAN
			IDAY	IHR	IMIN	METRC	IPLF	IPRT	
50	6	0	0	0	0	0	0	0	
			JUPER	NRI	LRUP1	TRACE			
			5	0	0	0			

MULTI-PLAN ANALYSES TO BE PERFORMED
NPLAN= 1 NRTIO= 6 LRTIO= 1
R10S= 0.20 0.35 0.50 0.65 0.80 1.00

SUB-AREA RUNOFF COMPUTATION

GENESEE RIVER INFLOW HYDROGRAPH AT MOUNT MORRIS DAM

ISTAQ	ICUMP	IECON	ITAPE	JPLF	JPRT	I NAME	ISTAGE	IAUTO
1	0	0	0	0	0	1	0	0

HYDROGRAPH DATA									
IHYDG	IUHG	TAREA	SNAP	TRSDA	TRSPC	RATIO	ISNO	ISAME	LOCAL
1	-1	1075.00	0.00	1075.00	0.00	0.000	0	1	0

PRECIP DATA							
SPFE	PMS	R6	R12	R24	R48	R72	R96
0.00	22.50	52.00	65.00	73.00	84.00	0.00	0.00

TRSPC COMPUTED BY THE PROGRAM IS 0.913

LOSS DATA										
DRPT	STRKR	DLTKR	RTIUL	ERAIN	STRKS	RTIUR	STRIL	CNSIL	ALSMX	RTIMP
0	0.00	0.00	1.00	0.00	0.00	1.00	1.00	0.10	0.00	0.00

4900. 13400. 23000. 24900. 17000. 8400. 5600. 4300. 3400. 2700.
2100. 1600. 1300. 1000.

UNIT GRAPH TOTALS 113600. CFS OR 0.98 INCHES OVER THE AREA

RECEDITION DATA
STRTO= -1.00 QRCSD= -0.10 RTIOR= 2.00

END-OF-PERIOD FLOW													
MO.DA	HR.MN	PERIOD	RAIN	EXCS	LOSS	COMP Q	MO.DA	HR.MN	PERIOD	RAIN	EXCS	LOSS	COMP Q
1.01	6.00	1	0.10	0.00	0.10	1003.	1.07	12.00	26	0.00	0.00	0.00	15496.
1.01	12.00	2	0.40	0.00	0.40	936.	1.07	12.00	27	0.00	0.00	0.00	14458.

McFARLAND-JOHNSON ENGINEERS, INC.

1.01	18.00	3	1.01	0.70	0.91	4285.	1.08	0.00	28	0.00	0.00	0.00	13490.
1.02	0.00	4	0.15	0.00	0.15	10145.	1.08	6.00	29	0.00	0.00	0.00	12586.
1.04	6.00	5	0.00	0.00	0.60	17055.	1.08	12.00	30	0.00	0.00	0.00	11744.
1.02	12.00	6	2.07	2.07	0.00	23953.	1.08	18.00	31	0.00	0.00	0.00	10957.
1.02	18.00	7	10.00	10.00	0.60	90928.	1.09	0.00	32	0.00	0.00	0.00	10223.
1.03	0.00	8	0.99	0.39	0.60	192426.	1.09	6.00	33	0.00	0.00	0.00	9539.
1.03	6.00	9	0.00	0.00	0.00	293945.	1.09	12.00	34	0.00	0.00	0.00	8900.
1.03	12.00	10	0.00	0.00	0.00	299012.	1.09	18.00	35	0.00	0.00	0.00	8304.
1.03	18.00	11	0.00	0.00	0.00	201506.	1.10	0.00	36	0.00	0.00	0.00	7748.
1.04	0.00	12	0.00	0.00	0.00	105397.	1.10	6.00	37	0.00	0.00	0.00	7229.
1.04	6.00	13	0.00	0.00	0.00	70670.	1.10	12.00	38	0.00	0.00	0.00	6745.
1.04	12.00	14	0.00	0.00	0.00	54298.	1.10	18.00	39	0.00	0.00	0.00	6293.
1.04	18.00	15	0.00	0.00	0.00	42917.	1.11	0.00	40	0.00	0.00	0.00	5872.
1.05	0.00	16	0.00	0.00	0.00	34011.	1.11	6.00	41	0.00	0.00	0.00	5479.
1.05	6.00	17	0.00	0.00	0.00	23916.	1.11	12.00	42	0.00	0.00	0.00	5112.
1.05	12.00	18	0.00	0.00	0.00	26980.	1.11	18.00	43	0.00	0.00	0.00	4769.
1.05	18.00	19	0.00	0.00	0.00	25173.	1.12	0.00	44	0.00	0.00	0.00	4450.
1.06	0.00	20	0.00	0.00	0.00	23487.	1.12	6.00	45	0.00	0.00	0.00	4152.
1.06	6.00	21	0.00	0.00	0.00	21914.	1.12	12.00	46	0.00	0.00	0.00	3874.
1.06	12.00	22	0.00	0.00	0.00	20447.	1.12	18.00	47	0.00	0.00	0.00	3615.
1.06	18.00	23	0.00	0.00	0.00	19078.	1.13	0.00	48	0.00	0.00	0.00	3372.
1.07	0.00	24	0.00	0.00	0.00	17800.	1.13	6.00	49	0.00	0.00	0.00	3147.
1.07	6.00	25	0.00	0.00	0.00	16608.	1.13	12.00	50	0.00	0.00	0.00	2936.

SUM 17.25 13.29 3.96 1838290.
(438.)(337.)(101.)(52054.56)

	PEAK	6-HOUR	24-HOUR	72-HOUR	TOTAL	VOLUME
CFS	299012.	296479.	235844.	120159.	1836321.	
CMS	8467.	8395.	6578.	3403.	51999.	
INCHES		2.57	8.16	12.48	15.89	
MM		65.10	207.35	310.92	403.61	
AC-Ft	147014.	467789.	714994.	910572.		
THOUS CU M	181339.	577010.	881931.	1123174.		

	HYDROGRAPH AT STA 1 FOR PLAN 1, RILO 1					
201.	187.	857.	2029.	3411.	5791.	18166.
40301.	21079.	14134.	10642.	8583.	0802.	5763.
4383.	4069.	3816.	3566.	3322.	3099.	2892.
2191.	2045.	1908.	1780.	1661.	1550.	1446.
1096.	1022.	954.	890.	830.	775.	723.

	PEAK	6-HOUR	24-HOUR	72-HOUR	TOTAL	VOLUME
CFS	59802.	59296.	47169.	24032.	367264.	
CMS	1693.	1679.	1336.	681.	10400.	
INCHES		0.51	1.63	2.50	3.18	
MM		13.03	41.47	63.38	80.72	
AC-Ft	29403.	93558.	142999.	182114.		
THOUS CU M	36268.	115402.	176386.	224635.		

	HYDROGRAPH AT STA 1 FOR PLAN 1, RILO 2					
351.	328.	1500.	3551.	5969.	10134.	31825.
70527.	36889.	24734.	18973.	15021.	11904.	10121.
7670.	7156.	6077.	6230.	5813.	5424.	5060.
3835.	3578.	3339.	3115.	2906.	2714.	2530.
1918.	1789.	1069.	1558.	1453.	1356.	1265.

McFARLAND - JOHNSON ENGINEERS, INC.

	PEAK	6-HOUR	24-HOUR	72-HOUR	TOTAL VOLUME
CFS	104654.	103768.	82545.	42050.	642712.
CMS	2963.	2938.	2337.	1191.	18200.
INCHES		0.90	2.80	4.37	5.50
MM		22.81	72.57	110.92	141.20
AC-FT		51455.	163720.	250248.	318700.
THOUS CU M		63469.	201953.	306670.	393111.

	HYDROGRAPH AT STA 1 FOR PLAN 1, RTIO 3								
502.	468.	2143.	5073.	8527.	14477.	45464.	96213.	146973.	149506.
100753.	52698.	35355.	27104.	21459.	17005.	14458.	13490.	12586.	11744.
10951.	10223.	9539.	8900.	6304.	7748.	7229.	6745.	6293.	5872.
5479.	5112.	4769.	4450.	4152.	3674.	3615.	3372.	3147.	2936.
2739.	2556.	2385.	2225.	2076.	1937.	1807.	1686.	1573.	1468.

	PEAK	6-HOUR	24-HOUR	72-HOUR	TOTAL VOLUME
CFS	149506.	148239.	117922.	60079.	916161.
CMS	4234.	4198.	3339.	1701.	25999.
INCHES		1.28	4.08	0.24	7.95
MM		32.56	103.67	158.46	201.81
AC-FT		73507.	233895.	357497.	455286.
THOUS CU M		90670.	288505.	440906.	561581.

	HYDROGRAPH AT STA 1 FOR PLAN 1, RTIO 4								
652.	608.	2765.	6594.	11096.	16820.	59103.	125077.	191065.	194358.
130979.	68508.	45935.	35235.	27896.	22107.	18796.	17537.	16362.	15267.
14244.	13290.	12400.	11570.	10795.	10072.	9398.	8768.	8181.	7633.
7122.	6645.	6200.	5785.	5398.	5036.	4699.	4384.	4091.	3817.
3561.	3323.	3100.	2893.	2699.	2518.	2349.	2192.	2045.	1908.

	PEAK	6-HOUR	24-HOUR	72-HOUR	TOTAL VOLUME
CFS	194358.	192711.	153290.	78103.	1193608.
CMS	5504.	5457.	4341.	2212.	33799.
INCHES		1.67	5.31	8.11	10.33
MM		42.36	134.78	206.00	262.35
AC-FT		95559.	304063.	464746.	591872.
THOUS CU M		117871.	375056.	53255.	730063.

	HYDROGRAPH AT STA 1 FOR PLAN 1, RTIO 5								
802.	749.	3426.	8116.	13644.	23103.	72742.	153941.	235156.	239210.
161205.	84317.	56536.	43367.	34334.	27209.	23133.	21584.	20138.	18790.
17531.	16357.	15262.	14240.	13286.	12397.	11566.	10792.	10069.	9395.
8760.	8179.	7631.	7120.	6643.	6198.	5783.	5396.	5035.	4697.
4383.	4089.	3816.	3560.	3322.	3099.	2892.	2698.	2517.	2349.

	PEAK	6-HOUR	24-HOUR	72-HOUR	TOTAL VOLUME
CFS	239210.	237183.	188675.	96127.	1469056.
CMS	6774.	6716.	5343.	2722.	41599.
INCHES		2.05	6.53	9.98	12.71
MM		52.13	165.88	253.54	322.89
AC-FT		117611.	374232.	571995.	728458.
THOUS CU M		145072.	461608.	705545.	898539.

HYDROGRAPH ROUTING ROUTING OF INFLOW HYDROGRAPH USING MODIFIED PULS METHOD

0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
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	PEAK	6-HOUR	24-HOUR	72-HOUR	TOTAL VOLUME
CFS	52050.	51242.	42492.	23715.	366505.
CMS	1474.	1451.	1203.	672.	10300.
INCHES		0.44	1.47	2.46	3.17
MM		11.20	37.30	62.55	80.57
AC-FT		25409.	84282.	141112.	181768.
INCHES CU M		31342.	103961.	174059.	224207.

MAXIMUM STORAGE = 308123.

STATION 2, PLAN 1, RT10 2

	OUTFLOW								
194.	275.	628.	1678.	3383.	5966.	14274.	33814.	71907.	100718.
86437.	58906.	37504.	26978.	22348.	17431.	13879.	11612.	10237.	9284.
8543.	7918.	7364.	6800.	6396.	5966.	5565.	5192.	4844.	4520.
4217.	3935.	3071.	3425.	3196.	2982.	2782.	2596.	2422.	2260.
2108.	1967.	1836.	1713.	1598.	1491.	1391.	1298.	1211.	1130.

	STOR								
337526.	337578.	337807.	338486.	339593.	341267.	346652.	359318.	375312.	383968.
380503.	370604.	361905.	356103.	351886.	348699.	346397.	344927.	344035.	343418.
342936.	342532.	342173.	341847.	341546.	341267.	341007.	340765.	340540.	340330.
340133.	339950.	339760.	339620.	339472.	339333.	339203.	339083.	338970.	338865.
338767.	338675.	338590.	336510.	338436.	336366.	338302.	338241.	338185.	338132.

	STAGE								
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

	PEAK	6-HOUR	24-HOUR	72-HOUR	TOTAL VOLUME
CFS	100718.	94577.	76855.	41508.	641469.
CMS	2852.	2678.	2176.	1175.	18165.
INCHES		0.32	2.66	4.31	5.55
MM		20.79	67.57	109.48	141.00
AC-FT		40898.	152440.	240987.	316094.
INCHES CU M		57848.	188032.	304654.	392363.

MAXIMUM STORAGE = 383968.

STATION 2, PLAN 1, RT10 3

	OUTFLOW								
278.	394.	897.	2397.	4833.	8523.	20391.	51497.	112995.	147331.
125197.	79851.	50549.	36965.	29947.	24018.	19433.	16412.	14545.	13228.
12189.	11304.	10517.	9799.	9137.	8522.	7950.	7417.	6920.	6457.
6024.	5621.	5244.	4893.	4565.	9260.	3975.	3708.	3460.	3228.
3012.	2610.	2622.	2447.	2283.	2130.	1987.	1854.	1730.	1614.

STOR
McFARLAND-JOHNSON ENGINEERS, INC. 

337500.	337554.	337982.	338954.	340533.	342925.	350017.	367920.	367431.	396395.
390870.	378061.	367571.	361300.	356811.	352900.	349990.	340030.	346820.	345974.
345301.	344127.	344211.	343752.	343322.	342924.	342553.	342200.	341580.	341585.
341305.	341043.	340799.	340572.	340359.	340161.	339976.	339604.	339043.	339493.
339352.	339222.	339100.	338966.	338880.	338781.	338688.	338602.	338521.	338446.

STAGE										
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

	PEAK	6-HOUR	24-HOUR	72-HOUR	TOTAL VOLUME
CFS	147331.	136264.	112799.	59300.	916413.
CMS	4172.	3659.	3194.	1079.	25950.
INCHES		1.18	3.90	6.10	7.93
MM		29.95	99.17	156.42	201.42
AC-FI		67503.	223734.	352890.	454420.
INCHES CU M		83345.	275972.	435283.	560518.

MAXIMUM STORAGE = 396395.

STATION 2, PLAN 1, RING 4

OUTFLOW										
301.	510.	1107.	3116.	6203.	11080.	26508.	72783.	153405.	193880.	
161495.	101455.	62491.	44067.	36409.	30097.	24760.	21111.	18808.	17152.	
15826.	14687.	13058.	12737.	11877.	11078.	10335.	9042.	8996.	8394.	
7832.	7307.	6818.	6361.	5935.	5538.	5167.	4821.	4498.	4197.	
3916.	3654.	3409.	3161.	2968.	2769.	2583.	2410.	2249.	2098.	

STOR										
337034.	337730.	338156.	339420.	341473.	344582.	354582.	375029.	397917.	407358.	
399910.	384170.	371902.	365454.	361000.	356909.	353449.	351084.	349591.	346518.	
347658.	340920.	340259.	345656.	345096.	344581.	344099.	343650.	343231.	342841.	
342476.	342130.	341819.	341523.	341247.	340990.	340749.	340525.	340316.	340120.	
339936.	339706.	339010.	339462.	339324.	339195.	339075.	338962.	338858.	338700.	

STAGE										
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

	PEAK	6-HOUR	24-HOUR	72-HOUR	TOTAL VOLUME
CFS	193680.	177668.	148990.	77108.	1191337.
CMS	5490.	5032.	4219.	2183.	33735.
INCHES		1.54	5.16	6.01	10.31
MM		39.05	130.99	203.37	261.05
AC-FI		86110.	295517.	458822.	590740.
INCHES CU M		108662.	364514.	565940.	728674.

MAXIMUM STORAGE = 407358.

McFARLAND-JOHNSON ENGINEERS, INC.

STATION 2, PLAN 1, R110 5

OUTFLOW									
444.	021.	1455.	3835.	7735.	13037.	32026.	96420.	193649.	242009.
195575.	121733.	74300.	54521.	41754.	35000.	29629.	25695.	23020.	21052.
19452.	18005.	10017.	15074.	14617.	13034.	12720.	11857.	11072.	10331.
9039.	8993.	8391.	7629.	7305.	6616.	6359.	5933.	5530.	5165.
4019.	4497.	4190.	3915.	3652.	3408.	3180.	2967.	2700.	2583.

STOR									
337600.	337807.	339331.	339686.	342413.	346240.	358548.	382755.	407310.	416909.
407094.	369892.	376201.	369915.	364403.	369475.	356735.	354055.	352322.	351046.
350009.	349109.	348301.	347560.	346874.	346238.	345645.	345092.	344577.	344096.
343048.	343229.	342859.	342475.	342135.	341910.	341522.	341246.	340984.	340748.
340524.	340315.	349129.	339937.	339767.	339909.	339401.	339323.	339194.	339074.

STAGE									
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

	PEAK	6-HOUR	24-HOUR	72-HOUR	TOTAL VOLUME
CFS	242009.	218792.	165075.	94916.	1466261.
CFS	6653.	6195.	5241.	2688.	41520.
INCHES		1.59	6.41	9.88	12.69
44		48.09	162.71	250.34	322.25
AC-FT		108492.	307091.	504787.	727071.
INCHES CU Y		133823.	452800.	696655.	696629.

MAXIMUM STURGE = 416909.

STATION 2, PLAN 1, R110 6

OUTFLOW									
555.	784.	1795.	4794.	9667.	17047.	40782.	129499.	249999.	302700.
243223.	147303.	90492.	66118.	51850.	41139.	35765.	31449.	28470.	26182.
24256.	22554.	21009.	19587.	16266.	17042.	15699.	14834.	13840.	12913.
12048.	11242.	10449.	9765.	9131.	8520.	7949.	7417.	6920.	6457.
6024.	5621.	5214.	4893.	4565.	4200.	3975.	3708.	3400.	3228.

STOR									
337760.	337900.	356503.	340508.	343666.	344450.	363835.	391919.	418406.	428428.
417150.	396403.	381003.	373216.	368048.	364060.	360596.	357785.	355858.	354371.
353122.	352019.	351016.	350090.	349241.	348446.	347706.	347015.	346371.	345770.
345210.	344687.	344199.	343743.	343319.	342922.	342553.	342207.	341880.	341585.
341305.	341043.	340799.	340572.	340359.	340161.	339970.	339604.	339043.	339493.

STAGE									
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

	PEAK	6-HOUR	24-HOUR	72-HOUR	TOTAL VOLUME

McFARLAND-JOHNSON ENGINEERS, INC.

CFS	302780.	270390.	233583.	115577.	1832627.
CMS	504.	7626.	6014.	331.	51939.
INCHES		2.39	6.09	12.32	15.06
"		60.75	205.36	313.02	402.85
AC-FI	137453.	403300.	700170.	908840.	
THOUS CFS H	169452.	571479.	671050.	1121057.	

MAXIMUM STORAGE = 426428.

SUB-AREA RUNOFF COMPUTATION

CAVASERAGA CREEK INFLOW HYDROGRAPH AT JONES BRIDGE GAGE

ISIAU	ICOMP	IECON	ITAPE	JPLT	JPKF	INAME	ISAGE	IAUTO
2	0	0	0	0	0	1	0	0

HYDROGRAPH DATA

IHYDG	ILNG	IAREA	SNAP	IRSDA	TRSPC	RATIO	ISNOW	ISAME	LOCAL
1	-1	335.00	0.00	335.00	0.00	0.000	0	1	0

PRECIP DATA

SPFE	PMS	R6	R12	R24	R30	R72	R96
0.00	22.10	73.00	83.00	93.00	103.00	0.00	0.00

TRSPC COMPUTED BY THE PROGRAM IS 0.093

LJSS DATA

LRPT	STKRR	DLTRR	RTIOL	ERAIN	STKRS	RTIOL	SITL	CNSTL	ALSMX	RTIOP
0	0.00	0.00	1.00	0.00	0.00	1.00	1.00	0.10	0.00	0.00

2500.	7800.	8200.	6000.	4000.	2800.	1900.	1300.	800.	500.
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UNIF GRAPH TOTALS 36000. CFS OR 1.00 INCHES OVER THE AREA

RECEDITION DATA

STKRS = -1.00 CRCSR = -0.10 RTIOL = 2.00

HR.DA	HR.MN	PERIOD	RAIN	EXCS	LOSS	END-OF-PERIOD FLOW		HR.DA	HR.MN	PERIOD	RAIN	EXCS	LOSS	CUMP
						COMP A	COMP B							
1.01	6.00	1	0.00	0.00	0.00	313.	1.07	12.00	20	0.00	0.00	0.00	0.00	5958.
1.01	12.00	2	0.21	0.00	0.21	292.	1.07	18.00	27	0.00	0.00	0.00	0.00	5559.
1.01	18.00	3	1.55	0.52	1.03	1567.	1.08	0.00	28	0.00	0.00	0.00	0.00	5187.
1.02	0.00	4	0.13	0.00	0.13	4293.	1.08	6.00	29	0.00	0.00	0.00	0.00	4839.
1.02	6.00	5	0.79	0.19	0.60	4956.	1.08	12.00	30	0.00	0.00	0.00	0.00	4515.
1.02	12.00	6	1.97	1.37	0.60	8235.	1.08	18.00	31	0.00	0.00	0.00	0.00	4213.
1.02	18.00	7	14.40	13.89	0.60	49037.	1.09	0.00	32	0.00	0.00	0.00	0.00	3931.
1.03	0.00	8	1.18	0.58	0.60	123138.	1.09	6.00	33	0.00	0.00	0.00	0.00	3568.
1.03	6.00	9	0.00	0.00	0.00	127675.	1.09	12.00	34	0.00	0.00	0.00	0.00	3422.
1.03	12.00	10	0.00	0.00	0.00	94451.	1.09	18.00	35	0.00	0.00	0.00	0.00	3193.
1.03	18.00	11	0.00	0.00	0.00	63478.	1.10	0.00	36	0.00	0.00	0.00	0.00	2979.
1.04	0.00	12	0.00	0.00	0.00	44235.	1.10	6.00	37	0.00	0.00	0.00	0.00	2780.
1.04	6.00	13	0.00	0.00	0.00	30031.	1.10	12.00	38	0.00	0.00	0.00	0.00	2593.
1.04	12.00	14	0.00	0.00	0.00	20370.	1.10	18.00	39	0.00	0.00	0.00	0.00	2420.

McFARLAND-JOHNSON ENGINEERS, INC.

1.04	10.00	15	0.00	0.00	0.00	12771.	1.11	0.00	40	0.00	0.00	0.00	2258.
1.05	0.00	16	0.00	0.00	0.00	11910.	1.11	0.00	41	0.00	0.00	0.00	2106.
1.05	0.00	17	0.00	0.00	0.00	11110.	1.11	12.00	42	0.00	0.00	0.00	1905.
1.05	12.00	18	0.00	0.00	0.00	10374.	1.11	18.00	43	0.00	0.00	0.00	1834.
1.05	16.00	19	0.00	0.00	0.00	9679.	1.12	0.00	44	0.00	0.00	0.00	1711.
1.06	0.00	20	0.00	0.00	0.00	9031.	1.12	6.00	45	0.00	0.00	0.00	1596.
1.06	6.00	21	0.00	0.00	0.00	8420.	1.12	12.00	46	0.00	0.00	0.00	1490.
1.06	12.00	22	0.00	0.00	0.00	7862.	1.12	18.00	47	0.00	0.00	0.00	1390.
1.06	16.00	23	0.00	0.00	0.00	7355.	1.13	0.00	48	0.00	0.00	0.00	1297.
1.07	0.00	24	0.00	0.00	0.00	6644.	1.13	6.00	49	0.00	0.00	0.00	1210.
1.07	6.00	25	0.00	0.00	0.00	6386.	1.13	12.00	50	0.00	0.00	0.00	1129.

SUM 20.32 16.16 3.85 747256.
(515.)(416.)(98.)(21159.93)

	PEAK	6-HOUR	24-HOUR	72-HOUR	TOTAL VOLUME
CFS	127675.	125500.	100430.	49310.	746533.
CMS	3021.	3554.	2644.	1410.	21139.
I+Ches		3.49	11.16	15.00	20.73
AA		88.52	283.34	421.58	520.54
AC-FI		62235.	199201.	296393.	370181.
InDJS CU A		76765.	245711.	365595.	456612.

	HYDROGRAPH AT STA			2 FOR PLAN 1, RT10 1			
63.	58.	313.	859.	991.	1047.	967.	24026.
12696.	8847.	5908.	4074.	2554.	2383.	2224.	2075.
1005.	1572.	1467.	1369.	1277.	1192.	1112.	1037.
843.	780.	734.	664.	639.	596.	556.	519.
421.	393.	301.	342.	319.	298.	276.	259.
							242.

	PEAK	6-HOUR	24-HOUR	72-HOUR	TOTAL VOLUME
CFS	25575.	25101.	20080.	9902.	149307.
CMS	724.	711.	569.	282.	4228.
I+Ches		0.70	2.23	3.32	4.15
AA		17.70	56.57	84.32	105.31
AC-FI		12447.	39840.	59279.	74036.
InDJS CU A		15353.	49142.	73119.	91322.

	HYDROGRAPH AT STA			2 FOR PLAN 1, RT10 2			
109.	102.	548.	1503.	1735.	2002.	17163.	43098.
22217.	15402.	10511.	7129.	4470.	4171.	3691.	44750.
2949.	2752.	2567.	2395.	2235.	2065.	1946.	3388.
1475.	1370.	1284.	1198.	1117.	1043.	973.	1694.
737.	688.	642.	599.	559.	521.	486.	847.
							790.
							395.

	PEAK	6-HOUR	24-HOUR	72-HOUR	TOTAL VOLUME
CFS	44750.	43927.	35151.	17434.	201296.
CMS	1207.	1244.	995.	494.	7399.
I+Ches		1.22	3.90	5.81	7.26
AA		30.98	99.17	147.55	184.29
AC-FI		21782.	69720.	103737.	129563.
InDJS CU A		26865.	85993.	127956.	159814.

	HYDROGRAPH AT STA			2 FOR PLAN 1, RT10 3			
150.	146.	783.	2147.	2478.	4117.	4519.	61569.
							63937.

McFARLAND-JOHNSON ENGINEERS, INC.



47226.

31739.	24119.	15010.	19185.	6360.	5956.	5559.	5167.	4839.	4515.
4213.	3931.	3000.	3422.	3193.	2979.	2780.	2593.	2420.	2258.
2106.	1905.	1834.	1711.	1596.	1490.	1390.	1297.	1210.	1129.
1053.	903.	917.	856.	798.	745.	695.	640.	605.	564.

	PEAK	6-HOUR	24-HOUR	72-HOUR	TOTAL VOLUME
CFS	63937.	62753.	50215.	24905.	373200.
CMS	1511.	1777.	1422.	705.	10570.
INCHES			1.74	5.58	10.36
MM			44.26	141.67	210.79
AC-FI		31117.	99600.	148190.	185091.
INHUS CU M		36363.	122855.	182797.	228300.

HYDROGRAPH AT STA 2 FOR PLAN 1, R110 4					
203.	190.	1018.	2791.	3221.	5353.
41261.	25753.	19520.	13240.	8301.	7745.
5477.	5110.	4700.	4449.	4151.	3573.
2736.	2555.	2144.	2224.	2075.	1935.
1369.	1278.	1192.	1112.	1038.	908.
					903.
					843.
					766.
					734.

	PEAK	6-HOUR	24-HOUR	72-HOUR	TOTAL VOLUME
CFS	83118.	81579.	65280.	32377.	485246.
CMS	2354.	2310.	1649.	917.	13741.
INCHES			2.27	7.25	10.79
MM			57.54	184.17	274.03
AC-FI		40452.	129481.	192555.	240618.
INHUS CU M		49491.	159712.	237037.	296798.

HYDROGRAPH AT STA 2 FOR PLAN 1, R110 5					
250.	235.	1253.	3434.	3965.	6588.
50783.	35368.	24025.	16290.	10217.	9533.
6741.	5209.	5808.	5475.	5109.	4700.
3370.	3145.	2934.	2730.	2554.	2383.
1665.	1572.	1467.	1369.	1277.	1192.
					1112.
					1037.
					968.
					903.

	PEAK	6-HOUR	24-HOUR	72-HOUR	TOTAL VOLUME
CFS	102300.	100405.	80344.	39848.	597226.
CMS	2897.	2843.	2275.	1128.	16912.
INCHES			2.79	2.92	13.28
MM			70.82	220.67	337.27
AC-FI		49788.	159361.	237114.	290145.
INHUS CU M		61412.	196569.	292476.	365290.

HYDROGRAPH AT STA 2 FOR PLAN 1, R110 6					
313.	292.	1507.	4293.	4956.	8235.
63476.	44235.	30031.	20370.	12771.	11916.
6426.	7662.	7335.	6644.	6356.	5958.
4213.	3931.	3666.	3422.	3193.	2979.
2106.	1905.	1834.	1711.	1596.	1490.
					1390.
					1297.
					1210.
					1129.

	PEAK	6-HOUR	24-HOUR	72-HOUR	TOTAL VOLUME
CFS	147675.	125506.	100430.	49610.	746533.
CMS	3621.	3554.	2844.	1410.	21139.
INCHES			3.49	11.16	16.60
MM			86.52	283.34	423.50
					526.54

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AC-FI
Inches Cu M 02235. 199201. 290393. 370181.
70765. 245711. 305595. 456612.

COMBINE GULFON-MORRIS DAM AND CANASERAGA CREEK INFLOW

ISLAND	ICOMP	IECUM	IIAPE	JPLF	UPRT	INAME	ISITAGE	IAUD
2	2	0	0	0	0	1	0	0

Sum of 2 HYDROGRAPHS At
 174. 215. 672. 1817. 2925. 5050. 17964. 43950. 61119. 70946.
 0512. 45503. 32121. 22648. 10225. 12740. 10334. 8790. 7821. 7127.
 0574. 6100. 5970. 5290. 4932. 4601. 4292. 4004. 3730. 3486.
 3252. 3034. 2631. 2642. 2465. 2300. 2140. 2002. 1866. 1743.
 1020. 1517. 1416. 1321. 1232. 1150. 1073. 1001. 934. 871.

	PEAK	0-HOUR	24-HOUR	72-HOUR	TOTAL VOLUME
CFS	70946.	67035.	59979.	33634.	515672.
CFS	2009.	1890.	1690.	952.	14606.
INCHES	0.44	1.58	2.60		3.40
IN	11.23	40.20	67.03		86.45
AC-FI	33240.	118966.	200134.		255804.
INCHES CU M	41001.	146742.	240562.		315530.

Sum of 2 HYDROGRAPHS At
 394. 377. 1177. 3160. 5118. 8849. 31437. 70912. 116663. 133776.
 110654. 74389. 48315. 36107. 26818. 21092. 17771. 15243. 13624. 12445.
 11492. 10670. 9931. 9256. 6631. 6051. 7511. 7007. 6536. 6100.
 591. 5310. 4955. 4623. 4313. 4024. 3755. 3504. 3209. 3050.
 2646. 2655. 2477. 2311. 2157. 2012. 1877. 1752. 1634. 1525.

	PEAK	6-HOUR	24-HOUR	72-HOUR	TOTAL VOLUME
CFS	133776.	125219.	109166.	58874.	902775.
CFS	3786.	3546.	3092.	1667.	25564.
INCHES	0.83	2.80	4.66		5.96
IN	20.98	73.19	116.39		151.28
AC-FI	62092.	216567.	350320.		447657.
INCHES CU M	70590.	267131.	432120.		552177.

Sum of 2 HYDROGRAPHS At
 434. 536. 1661. 4544. 731.. 12641. 44910. 113066. 176933. 194557.
 150930. 101908. 65564. 47150. 36332. 29970. 24992. 21599. 19385. 17743.
 16402. 15235. 14164. 13221. 12329. 11501. 10730. 10011. 9340. 8714.
 6131. 7500. 7070. 6604. 6162. 5749. 5364. 5005. 4670. 4357.
 4055. 3793. 3539. 3302. 3061. 2975. 2662. 2503. 2335. 2179.

PEAK 5-HOUR 24-HOUR 72-HOUR TOTAL VOLUME
 MC FARLAND-JOHNSON ENGINEERS, INC.

CFS	19457.	185745.	156980.	04125.	1289679.
CFS	5500.	5200.	4502.	2302.	30520.
INCHES		1.23	4.20	0.90	8.51
IN		31.13	106.57	109.17	210.12
AC-FI		92195.	315343.	500580.	639510.
INCHES CU M		113010.	386970.	617450.	768824.

Sum OF 2 HYDROGRAPHS AT				2 PLAN 1 RT10 4					
504.	039.	2105.	5907.	9505.	15433.	5832.	152022.	236583.	255274.
202750.	130208.	82011.	57927.	44711.	37042.	31900.	27854.	25100.	23022.
21303.	19791.	19450.	17185.	16027.	14951.	13948.	13014.	12142.	11329.
16570.	9002.	9202.	8505.	8010.	7474.	6974.	0507.	0071.	5604.
5205.	4931.	4001.	4293.	4005.	3737.	3487.	3253.	3035.	2832.

	PEAK	6-HOUR	24-HOUR	72-HOUR	TOTAL VOLUME
CFS	255274.	245929.	209032.	109367.	1676583.
CMS	7429.	6904.	5919.	3096.	47476.
INCHES		1.02	5.52	8.66	11.06
IN		41.21	140.11	219.97	280.95
AC-FI		121944.	414609.	650899.	831304.
INCHES CU M		150421.	511412.	802872.	1025472.

Sum OF 2 HYDROGRAPHS AT				2 PLAN 1 RT10 5					
694.	801.	2569.	7210.	11098.	20225.	71655.	194931.	295940.	311570.
240357.	157121.	90301.	70017.	52001.	45132.	38723.	33994.	30753.	28277.
20193.	24354.	22085.	21149.	19725.	16401.	17107.	16017.	14944.	13943.
13009.	12138.	11325.	10507.	9059.	9199.	8583.	8008.	7472.	6971.
6505.	0009.	5003.	5203.	4930.	4599.	4291.	4004.	3750.	3486.

	PEAK	6-HOUR	24-HOUR	72-HOUR	TOTAL VOLUME
CFS	317570.	306755.	258973.	134662.	2063487.
CMS	8993.	8000.	7333.	3813.	58431.
INCHES		2.02	6.83	10.66	13.61
IN		51.40	173.59	270.79	345.79
AC-FI		152110.	513660.	801293.	1023217.
INCHES CU M		187625.	633597.	988380.	1262119.

Sum OF 2 HYDROGRAPHS AT				2 PLAN 1 RT10 6					
863.	1070.	3302.	9087.	14623.	25282.	89819.	252437.	377874.	397232.
306701.	191597.	120523.	86467.	64021.	53055.	46903.	41622.	38155.	35213.
32682.	30416.	28344.	20431.	24654.	23000.	21458.	20021.	18090.	17429.
16251.	15172.	14150.	13200.	12324.	11499.	10729.	10010.	9340.	8714.
8131.	7580.	7078.	6604.	6162.	5749.	5364.	5005.	4670.	4357.

	PEAK	6-HOUR	24-HOUR	72-HOUR	TOTAL VOLUME
CFS	397232.	387553.	325956.	166400.	2579360.
CMS	11240.	10974.	9230.	4709.	73039.
INCHES		2.56	8.00	13.33	17.02
IN		64.94	216.49	338.03	432.23
AC-FI		192175.	646524.	1002051.	1279021.
INCHES CU M		237044.	797470.	1236012.	1577649.

HYDROGRAPH ROUTING

ROUTING COMBINED FLOWS TO AVON GAGE USING AUSKI.GUA METHOD

ISLAV	ICDF	ISLUV	ITAPE	JPLT	JPRF	INAME	ISTAGE	IAUTO
3	1	0	0	0	0	1	0	0
ROUTING DATA								
CLSS	CLSS	Avg	IRIS	ISAME	IDPT	IPMP	LSRN	
0.0	0.000	0.00	0	1	0	0	0	
ASIPS	ASIDL	LAG	AMSK		A	ISKA	STUR	ISPRAT
4	0	0	7.000	0.040	0.000	0.	0	0

STATION 3, PLAN 1, RTID 1

OUTFLO* PEAK 6-HOUR 24-HOUR 72-HOUR TOTAL VOLUME									
CFS	50020.	55032.	50963.	32791.	513957.				
CFS	1500.	1575.	1443.	929.	14554.				
INCHES		0.37	1.34	2.00	3.39				
MM		9.32	34.16	55.94	86.13				
AC-FT		27500.	101003.	195118.	254655.				
INHUS Cu M		34027.	124644.	240675.	314359.				

STATION 3, PLAN 1, RTID 2

OUTFLO* PEAK 6-HOUR 24-HOUR 72-HOUR TOTAL VOLUME									
CFS	103721.	99973.	91909.	57443.	899425.				
CFS	2937.	2831.	2603.	1627.	25459.				
INCHES		0.66	2.43	4.55	5.93				
MM		16.75	61.61	115.51	150.72				
AC-FT		49573.	182295.	341012.	445996.				
INHUS Cu M		61148.	224862.	421616.	550127.				

STATION 3, PLAN 1, RTID 3

OUTFLO*									
434.	442.	550.	1069.	2360.	4514.	2766.	25429.	58017.	101625.
McFARLAND-JOHNSON ENGINEERS, INC.									

130391.	150525.	157067.	111231.	04394.	03015.	47710.	37174.	25947.	25914.
21621.	19210.	17444.	15900.	14757.	13099.	12747.	11677.	11673.	10328.
9034.	0955.	0955.	7024.	7390.	5011.	6355.	5930.	5933.	5162.
4010.	4494.	4195.	3912.	3650.	3400.	3178.	2655.	2700.	2581.

	PEAK	6-HOUR	24-HOUR	72-HOUR	TOTAL VOLUME
CFS	150525.	144005.	133355.	52119.	1204642.
CFS	4271.	4095.	3770.	2325.	30354.
INCHES		0.95	3.54	0.50	0.48
INCHES		24.23	84.39	165.13	215.31
AC-FI		71707.	264501.	405642.	637137.
THOUS CUB FT		68449.	326258.	602731.	785696.

STATION 3, PLAN 1, RING 4

	6-HOUR	24-HOUR	72-HOUR	TOTAL VOLUME
504.	574.	723.	1415.	3009.
183405.	198101.	179101.	143338.	107516.
27797.	24808.	22539.	20712.	19163.
12525.	11085.	10962.	10172.	9490.
6201.	5842.	5451.	5060.	4745.

	PEAK	6-HOUR	24-HOUR	72-HOUR	TOTAL VOLUME
CFS	198101.	190753.	175073.	106513.	1070304.
CFS	5010.	5402.	4958.	3025.	47299.
INCHES		1.26	4.52	0.40	11.02
INCHES		31.47	117.35	214.79	279.91
AC-FI		94083.	347253.	635561.	620275.
THOUS CUB FT		110673.	420330.	783978.	1021655.

STATION 3, PLAN 1, RING 5

	6-HOUR	24-HOUR	72-HOUR	TOTAL VOLUME
694.	797.	809.	1742.	3777.
228994.	245372.	220104.	174967.	130679.
33868.	30343.	27540.	25440.	23559.
15415.	14381.	13415.	12519.	11069.
7700.	7190.	6709.	6259.	5846.

	PEAK	6-HOUR	24-HOUR	72-HOUR	TOTAL VOLUME
CFS	245372.	237103.	216623.	131525.	2055648.
CFS	6940.	6716.	6140.	3724.	56215.
INCHES		1.50	5.72	10.41	13.56
INCHES		39.75	145.34	204.48	344.50
AC-FI		117611.	430062.	762930.	1019419.
THOUS CUB FT		145071.	539474.	965367.	1257434.

STATION 3, PLAN 1, RING 6

	6-HOUR	24-HOUR	72-HOUR	TOTAL VOLUME
605.	664.	1112.	2170.	4741.
290103.	300510.	274702.	210970.	191371.
41707.	37505.	34353.	31690.	29395.
19207.	17976.	15772.	15648.	14600.
9033.	0958.	0580.	7024.	7500.

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	PEAK	0-10HR	24-HOUR	72-HOUR	TOTAL VOLUME
CFS	308510.	299347.	272703.	164539.	2569785.
CMS	6730.	8477.	1722.	4059.	72708.
INCHES		1.91	7.20	13.03	16.95
MM		50.16	162.79	330.87	430.03
AC-FT		148430.	540999.	979074.	1274273.
INCHES CU M		183093.	667169.	1207009.	1571793.

*SUB-AREA RUNOFF COMPUTATION

LOCAL INFLOW HYDROGRAPH AT AVON GAGE

ISIHO	ICOMI	IECON	ITAPE	JPLF	JPT	INAME	ISIAGE	IAUTO
3	0	0	0	0	0	1	0	0

HYDROGRAPH DATA									
IHYDG	TRNG	TAKEA	SNAP	TRSDA	TRSPC	RATIO	ISNOW	ISAME	LUCL
1	-1	256.00	0.00	256.00	0.00	0.000	0	1	0

PRECIP DATA							
SPFE	PMS	R6	R12	R24	R48	R72	R96
0.00	22.00	77.00	87.00	97.00	107.00	0.00	0.00

TRSPC COMPUTED BY THE PROGRAM IS 0.887

LOSS DATA										
DRPFI	SIRKR	DLTKR	RFLK	ERAIN	STRKS	RFLK	SIRFL	CNSTL	ALSMX	R1IMP
0	0.00	0.00	1.00	0.00	0.00	1.00	1.00	0.10	0.00	0.00

GIVEN UNIT GRAPH, NUMBER = 10									
1000.	4700.	5100.	3400.	2200.	1500.	900.	500.	200.	100.
UNIT GRAPH TOTALS 19000. CFS OR 0.71 INCHES OVER THE AREA									

RECEDITION DATA										
STRTJ=	-1.00	JACSN=	-0.10	RT10R=	2.00					

END-OF-PERIOD FLOW													
MO.DA	HR.MN	PERIOD	RAIN	EXCS	LOSS	CMP 0	MO.DA	HR.MN	PERIOD	RAIN	EXCS	LOSS	CMP 0
1.01	6.00	1	0.08	0.00	0.08	239.	1.07	12.00	26	0.00	0.00	0.00	3561.
1.01	12.00	2	0.20	0.00	0.20	223.	1.07	16.00	27	0.00	0.00	0.00	3323.
1.01	18.00	3	1.55	0.51	1.04	718.	1.08	0.00	26	0.00	0.00	0.00	3100.
1.02	0.00	4	0.12	0.00	0.12	289.	1.08	6.00	29	0.00	0.00	0.00	2693.
1.01	0.00	5	0.76	0.18	0.60	2.	1.08	12.00	30	0.00	0.00	0.00	2699.
1.02	12.00	6	1.95	1.35	0.60	4.	1.08	18.00	31	0.00	0.00	0.00	2518.
02	18.00	7	15.03	14.43	0.60	7.	1.09	0.00	32	0.00	0.00	0.00	2350.
1.03	0.00	8	1.17	0.57	0.60	11.	1.09	6.00	33	0.00	0.00	0.00	2192.
1.03	6.00	9	0.00	0.00	0.00	81ed2.	1.09	12.00	34	0.00	0.00	0.00	2046.
1.03	12.00	10	0.00	0.00	0.00	55613.	1.09	18.00	35	0.00	0.00	0.00	1909.
1.03	18.00	11	0.00	0.00	0.00	30106.	1.10	0.00	36	0.00	0.00	0.00	1781.
1.04	0.00	12	0.00	0.00	0.00	24375.	1.10	6.00	37	0.00	0.00	0.00	1661.
1.04	6.00	13	0.00	0.00	0.00	14662.	1.10	12.00	38	0.00	0.00	0.00	1550.
1.04	12.00	14	0.00	0.00	0.00	8182.	1.10	18.00	39	0.00	0.00	0.00	1440.
1.04	18.00	15	0.00	0.00	0.00	7034.	1.11	0.00	40	0.00	0.00	0.00	1350.
1.05	0.00	16	0.00	0.00	0.00	7123.	1.11	7.00	41	0.00	0.00	0.00	1259.

MCGARLAND-JOHNSON ENGINEERS, INC.

1.05	6.00	17	0.00	0.00	0.00	0040.	1.11	12.00	42	0.00	0.00	0.00	1175.
1.05	12.00	18	0.00	0.00	0.00	0201.	1.11	18.00	43	0.00	0.00	0.00	1090.
1.05	18.00	19	0.00	0.00	0.00	5780.	1.12	0.00	44	0.00	0.00	0.00	1023.
1.06	0.00	20	0.00	0.00	0.00	5398.	1.12	6.00	45	0.00	0.00	0.00	954.
1.06	6.00	21	0.00	0.00	0.00	5037.	1.12	12.00	46	0.00	0.00	0.00	890.
1.06	12.00	22	0.00	0.00	0.00	4699.	1.12	18.00	47	0.00	0.00	0.00	831.
1.06	18.00	23	0.00	0.00	0.00	4385.	1.13	0.00	48	0.00	0.00	0.00	775.
1.07	0.00	24	0.00	0.00	0.00	4091.	1.13	6.00	49	0.00	0.00	0.00	723.
1.07	6.00	25	0.00	0.00	0.00	3817.	1.13	12.00	50	0.00	0.00	0.00	675.

SUM 20.89 17.05 3.84 436000.
(531.)(433.)(98.)(12348.01)

	PEAK	6-HOUR	24-HOUR	72-HOUR	TOTAL VOLUME
CFS	81682.	79354.	60967.	26933.	435610.
CMS	2319.	2247.	1726.	819.	12335.
INCHES		2.88	6.86	12.62	15.63
MM		73.24	225.08	320.45	402.05
AC-FT		39349.	120927.	172161.	216005.
THOUS CU M		48536.	149161.	212358.	266438.

	HYDROGRAPH AT STA			3 FOR PLAN 1, R110 1			
48.	45.	144.	513.	592.	821.	4598.	15365.
7221.	4875.	2932.	1030.	1527.	1425.	1329.	1240.
1007.	940.	877.	618.	753.	712.	665.	620.
504.	470.	438.	409.	362.	356.	332.	310.
252.	235.	219.	205.	191.	178.	166.	155.
							145.
							135.

	PEAK	6-HOUR	24-HOUR	72-HOUR	TOTAL VOLUME
CFS	16376.	15871.	12193.	5787.	87122.
CMS	464.	449.	345.	164.	2467.
INCHES		0.58	1.77	2.52	3.17
MM		14.65	45.02	64.09	80.41
AC-FT		7870.	24185.	34432.	43201.
THOUS CU M		9707.	29832.	42472.	53288.

	HYDROGRAPH AT STA			3 FOR PLAN 1, R110 2			
84.	78.	251.	900.	1036.	1436.	8046.	26889.
12637.	8531.	5132.	2864.	2672.	2493.	2326.	2170.
1763.	1045.	1535.	1432.	1336.	1247.	1163.	1085.
881.	622.	707.	710.	668.	623.	582.	543.
441.	411.	384.	358.	334.	314.	291.	271.
							253.
							236.

	PEAK	6-HOUR	24-HOUR	72-HOUR	TOTAL VOLUME
CFS	28659.	27774.	21339.	10126.	152464.
CMS	812.	786.	604.	287.	4317.
INCHES		1.01	3.10	4.42	5.54
MM		25.63	78.78	112.16	140.72
AC-FT		13772.	42324.	60256.	75602.
THOUS CU M		16988.	52206.	74325.	93253.

	HYDROGRAPH AT STA			3 FOR PLAN 1, R110 3			
119.	111.	359.	1294.	1460.	2052.	11495.	38413.
18053.	12188.	7331.	4091.	3817.	3561.	3323.	3100.
2518.	2350.	2192.	2046.	1909.	1781.	1661.	1550.
							1446.
							1350.

McFARLAND-JOHNSON ENGINEERS, INC.

1259.	1175.	1090.	1023.	954.	890.	831.	775.	723.	675.
030.	087.	040.	511.	477.	440.	415.	388.	304.	337.

	PEAK	6-HOUR	24-HOUR	72-HOUR	TOTAL VOLUME
CFS	23941.	39677.	30484.	14400.	217805.
CMS	1159.	1124.	663.	410.	6100.
INCHES		1.44	4.43	0.31	7.91
MM		36.02	112.54	100.22	201.03
AC-FT		19075.	60463.	8001.	108003.
INCHES CU M		24208.	74580.	100179.	133219.

	HYDROGRAPH AT STA 3 FOR PLAN 1, RT10 4								
155.	145.	400.	1083.	1924.	2008.	14943..	49937.	53223.	36148.
23469.	15844.	9531.	5318.	4962.	4030.	4320.	4031.	3761.	3509.
3274.	3055.	2850.	2659.	2481.	2515.	2100.	2015.	1880.	1754.
1637.	1527.	1425.	1330.	1241.	1157.	1080.	1000.	940.	877.
818.	764.	713.	600.	620.	579.	540.	504.	470.	439.

	PEAK	6-HOUR	24-HOUR	72-HOUR	TOTAL VOLUME
CFS	53223.	51580.	39629.	18606.	283147.
CMS	1507.	1461.	1122.	533.	8018.
INCHES		1.87	5.76	0.20	10.29
MM		47.61	146.30	208.29	261.33
AC-FT		25577.	76002.	111905.	140403.
INCHES CU M		31549.	96955.	138033.	173185.

	HYDROGRAPH AT STA 3 FOR PLAN 1, RT10 5								
191.	178.	574.	2071.	2369.	3283.	18391.	61461.	65505.	44490.
28865.	19500.	11730.	6546.	6107.	5698.	5317.	4961.	4629.	4319.
4029.	3760.	3508.	3273.	3054.	2849.	2056.	2460.	2314.	2159.
2015.	1800.	1754.	1636.	1527.	1425.	1329.	1240.	1157.	1080.
1007.	940.	877.	618.	763.	714.	605.	620.	579.	540.

	PEAK	6-HOUR	24-HOUR	72-HOUR	TOTAL VOLUME
CFS	65505.	63483.	48774.	23146.	348488.
CMS	1655.	1798.	1381.	655.	9600.
INCHES		2.31	7.09	10.09	12.66
MM		58.59	180.07	256.36	321.64
AC-FT		31479.	96741.	137729.	172804.
INCHES CU M		38629.	119329.	169886.	213151.

	HYDROGRAPH AT STA 3 FOR PLAN 1, RT10 6								
239.	223.	718.	2589.	2961.	4104.	22969.	76826.	81682.	55613.
36106.	24375.	14602.	8162.	7634.	7123.	6646.	6201.	5786.	5398.
5037.	4699.	4385.	4091.	3817.	3561.	3323.	3100.	2693.	2699.
2518.	2350.	2192.	2046.	1909.	1781.	1661.	1550.	1446.	1350.
1259.	1175.	1090.	1023.	954.	890.	631.	775.	723.	675.

	PEAK	6-HOUR	24-HOUR	72-HOUR	TOTAL VOLUME
CFS	81884.	79354.	60967.	28933.	435611.
CMS	2319.	2247.	1726.	819.	12335.
INCHES		2.88	8.86	12.62	15.83
MM		73.24	225.08	320.45	402.05
AC-FT		39349.	120927.	172161.	216005.
INCHES CU M		48530.	149161.	212743.	266438.

McFARLAND-JOHNSON ENGINEERS, INC.

COMBINE HYDROGRAPHS

COMBINE FLOWS AT AVON GAGE

1STAU	1COMP	IECON	1TAPE	JPFT	JPRT	INAME	1STAGE	IAUD
3	2	0	0	0	0	1	0	0

		SUM OF 2 HYDROGRAPHS AT			3 PLAN 1 RTIU 1				
221.	221.	360.	953.	1536.	2627.	8513.	25438.	38523.	48571.
57856.	61701.	57371.	48091.	38397.	29545.	22560.	17492.	13955.	11544.
9902.	8752.	7904.	7237.	6682.	6200.	5767.	5373.	5009.	4671.
4358.	4065.	3793.	3539.	3302.	3081.	2874.	2682.	2502.	2335.
2170.	2034.	1896.	1769.	1651.	1540.	1437.	1341.	1251.	1107.

		PEAK	6-HOUR	24-HOUR	72-HOUR	TOTAL VOLUME
CFS	CFS	61701.	59779.	56315.	38065.	601079.
INCHES	INCHES	1747.	1693.	1595.	1078.	17021.
MM	MM		0.33	1.26	2.55	3.30
AC-FT	AC-FT		8.48	31.95	64.78	65.25
THOUS CU M	THOUS CU M		29642.	111699.	220502.	298056.
			36563.	137779.	279380.	367640.

		SUM OF 2 HYDROGRAPHS AT			3 PLAN 1 RTIU 2				
387.	387.	540.	1668.	2689.	4596.	14898.	44517.	68165.	88133.
106401.	112252.	101357.	81925.	63654.	46556.	37243.	29203.	23601.	19748.
17067.	15192.	13709.	12634.	11679.	10842.	10089.	9400.	8704.	8175.
7626.	7114.	6538.	6193.	5778.	5391.	5030.	4693.	4379.	4086.
3612.	3051.	3319.	3096.	2889.	2696.	2515.	2347.	2190.	2043.

		PEAK	6-HOUR	24-HOUR	72-HOUR	TOTAL VOLUME
CFS	CFS	112252.	109357.	101275.	66726.	1051888.
INCHES	INCHES	3179.	3097.	2868.	1889.	29780.
MM	MM		0.61	2.26	4.47	5.87
AC-FT	AC-FT		15.51	57.45	113.56	149.18
THOUS CU M	THOUS CU M		54226.	200876.	397049.	521597.
			66807.	247776.	489753.	643381.

		SUM OF 2 HYDROGRAPHS AT			3 PLAN 1 RTIU 3				
553.	553.	915.	2383.	3841.	6566.	21283.	63642.	98958.	129631.
156444.	163014.	144998.	115322.	88211.	66579.	51039.	40275.	32840.	27713.
24139.	21560.	19590.	18011.	16666.	15480.	14409.	13427.	12520.	11677.
10694.	10103.	9482.	8041.	8255.	7702.	7186.	6705.	6256.	5837.
5446.	5081.	4741.	4423.	4127.	3851.	3593.	3352.	3128.	2918.

		PEAK	6-HOUR	24-HOUR	72-HOUR	TOTAL VOLUME
CFS	CFS	163014.	159729.	140733.	95448.	1502697.
		4616.	4523.	4155.	2633.	42552.

MCFARLAND-JOHNSON ENGINEERS, INC.

INCHES	0.89	3.23	0.40	0.39
MM	22.05	83.24	104.44	213.12
AC-FI	79294.	291041.	507955.	745139.
THOUS CU M	97097.	350993.	700062.	919115.

SUM OF 2 HYDROGRAPHS AT				3 PLAN 1 R110 4					
719.	719.	1109.	3096.	4993.	8530.	27068.	83446.	130591.	172022.
206674.	213945.	105712.	148656.	112480.	84109.	64257.	50866.	41746.	35470.
31071.	278042.	25389.	23371.	21644.	20113.	16726.	17453.	16274.	15180.
14161.	13212.	12327.	11501.	10731.	10012.	9342.	8716.	8132.	7588.
7080.	6600.	6103.	5750.	5365.	5000.	4671.	4358.	4066.	3794.

	PEAK	6-HOUR	24-HOUR	72-HOUR	TOTAL VOLUME
CFS	213945.	219409.	192407.	124222.	1953506.
CM	6058.	5958.	5450.	3518.	55317.
INCHES		1.17	4.30	0.32	10.91
MM		29.84	109.19	211.41	277.05
AC-FI		104335.	381754.	739173.	968681.
THOUS CU M		128696.	470886.	911750.	1194850.

SUM OF 2 HYDROGRAPHS AT				3 PLAN 1 R110 5					
885.	885.	1403.	3813.	6145.	10500.	34052.	103231.	162730.	215148.
257679.	264872.	231634.	181533.	136787.	101726.	77286.	61177.	50408.	43058.
37697.	34103.	31148.	28713.	26613.	24742.	23041.	21477.	20029.	18083.
17429.	15261.	15171.	14155.	13207.	12323.	11497.	10728.	10009.	9339.
8713.	8130.	7565.	7078.	6604.	6101.	5749.	5364.	5005.	4609.

	PEAK	6-HOUR	24-HOUR	72-HOUR	TOTAL VOLUME
CFS	264872.	201376.	238231.	153040.	2404316.
CM	7500.	7401.	6746.	4334.	68083.
INCHES		1.46	5.32	10.25	13.42
MM		37.07	135.15	260.46	340.99
AC-FI		129608.	472525.	910653.	1192223.
THOUS CU M		159869.	582851.	1123274.	1470585.

SUM OF 2 HYDROGRAPHS AT				3 PLAN 1 R110 6					
1106.	1107.	1829.	4767.	7682.	13133.	42566.	129717.	206251.	273471.
326289.	332885.	269305.	225100.	169005.	125332.	94700.	74563.	61503.	52801.
46744.	42200.	38737.	35787.	33212.	30900.	28788.	26840.	25033.	23352.
21766.	20326.	13904.	17094.	16509.	15403.	14372.	13409.	12511.	11674.
10892.	10162.	9482.	8647.	8254.	7702.	7186.	6705.	6256.	5837.

	PEAK	6-HOUR	24-HOUR	72-HOUR	TOTAL VOLUME
CFS	332885.	329587.	299461.	191565.	3005395.
CM	9426.	9333.	8430.	5426.	85103.
INCHES		1.84	0.69	12.84	16.78
MM		46.74	169.88	326.02	426.24
AC-FI		163432.	593978.	1139690.	1490279.
THOUS CU M		201590.	732660.	1406033.	1838231.



HYDROGRAPH ROUTING

ROUTE FLOWS TO CONFLUENCE OF BLACK CREEK BY LAGGING FLOWS

	ISIAU	ICOMP	IECON	ITAPE	JPLT	JPKT	INAE	ISAGE	IAUD
	4	1	0	0	0	0	1	0	0
ROUTING DATA									
SLUSS	CLUSS	Avg	IRES	ISAAE	IJPT	IPMP		LSTR	
0.0	0.000	0.00	0	1	0	0		0	
NSIPS	NSILU	LAG	AMSKK	X	ISh	SIURA	ISPRAT		
0	0	1	0.000	0.000	0.000	0.	0		

STATION 4, PLAN 1, RTID 1

OUTFLOW

221.	221.	221.	356.	953.	1536.	2627.	8513.	25438.	38523.
46571.	57650.	61701.	57371.	48091.	38397.	29545.	22500.	17492.	13955.
11544.	9902.	5752.	7904.	7237.	6082.	6200.	5707.	5373.	5009.
4671.	4358.	4005.	3793.	3539.	3302.	3081.	2874.	2682.	2502.
2335.	2178.	2032.	1890.	1709.	1551.	1540.	1437.	1341.	1251.

	PEAK	6-HOUR	24-HOUR	72-HOUR	TOTAL VOLUME
CFS	61701.	59779.	56315.	38065.	600091.
CMS	1747.	1693.	1595.	1078.	16993.
INCHES		0.33	1.20	2.55	3.35
MM		8.48	31.95	64.78	85.11
AC-FI		29642.	111699.	226502.	297566.
THOUS CU M		30503.	137779.	279390.	307042.

STATION 4, PLAN 1, RTID 2

	OUTFLOW								
367.	387.	387.	640.	1668.	2089.	4590.	14898.	44517.	68105.
88133.	106461.	112252.	101357.	81925.	63654.	48556.	37243.	29293.	23601.
19745.	17067.	15192.	13769.	12634.	11579.	10842.	10089.	9400.	8704.
8115.	7026.	7114.	6038.	6193.	5778.	5391.	5030.	4693.	4379.
4086.	3812.	3557.	3319.	3090.	2889.	2696.	2515.	2341.	2190.

	PEAK	6-HOUR	24-HOUR	72-HOUR	TOTAL VOLUME
CFS	112252.	109357.	101275.	66726.	1050159.
CMS	3179.	3097.	2888.	1889.	29737.
INCHES		0.61	2.26	4.47	5.80
MM		15.51	57.45	113.50	148.94
AC-FI		54226.	200876.	397049.	520740.
THOUS CU M		66887.	247776.	489753.	642323.

STATION 4, PLAN 1, RTID 3

	OUTFLOW								
553.	553.	553.	915.	2363.	3641.	6566.	21283.	63842.	98958.
129631.	150444.	103014.	144998.	115322.	88211.	66579.	51039.	40275.	32840.
27713.	24139.	21560.	19590.	18011.	16665.	16480.	14409.	13427.	12520.

McFARLAND-JOHNSON ENGINEERS, INC.

11071.	10094.	10103.	9402.	8847.	8255.	7702.	7186.	6705.	6256.
5037.	5440.	5501.	4741.	4423.	4127.	3551.	3593.	3352.	3128.

	PEAK	6-HOUR	24-HOUR	72-HOUR	TOTAL VOLUME
CFS	163014.	159729.	146733.	95449.	1500227.
CM3	4010.	4523.	4155.	2703.	42482.
INCHES		0.59	3.28	0.40	8.38
MM		22.05	83.24	102.44	212.77
AC-FT		79204.	291041.	507955.	743914.
INCHES CU 4		97097.	358993.	700502.	917605.

STATION 4, PLAN 1, RT10 4

OUTFLOWS									
719.	719.	719.	1109.	3098.	9993.	8530.	27668.	83440.	130591.
172022.	206814.	213945.	186712.	148656.	112480.	84109.	64257.	53680.	41746.
35470.	31071.	27602.	25369.	23371.	21644.	20113.	18726.	17453.	16274.
15100.	14101.	13212.	12327.	11501.	10731.	10012.	9342.	6710.	8132.
7588.	7060.	6600.	6163.	5750.	5365.	5006.	4071.	4355.	4066.

	PEAK	6-HOUR	24-HOUR	72-HOUR	TOTAL VOLUME
CFS	213945.	210409.	192467.	124222.	1950290.
CM3	6058.	5958.	5450.	3518.	55226.
INCHES		1.17	4.30	0.32	10.89
MM		29.81	109.19	211.41	270.60
AC-FT		104335.	381754.	739173.	967089.
INCHES CU 4		128696.	470866.	911750.	1192886.

STATION 4, PLAN 1, RT10 5

OUTFLOWS									
885.	885.	885.	1463.	3613.	6145.	10506.	34052.	103231.	162780.
215146.	257679.	264572.	231834.	181533.	136761.	101720.	77286.	61177.	50408.
43058.	37697.	34103.	31148.	28713.	26613.	24742.	23041.	21477.	20029.
16003.	17429.	16201.	15171.	14155.	13207.	12323.	11497.	10720.	10009.
9339.	8713.	8130.	7585.	7078.	6004.	6161.	5749.	5364.	5005.

	PEAK	6-HOUR	24-HOUR	72-HOUR	TOTAL VOLUME
CFS	264672.	261376.	238231.	153046.	2400505.
CM3	7500.	7401.	6746.	4334.	67971.
INCHES		1.40	5.32	10.25	13.40
MM		37.07	135.15	260.46	340.43
AC-FT		129608.	472525.	910653.	1190263.
INCHES CU 4		159869.	582851.	1125274.	1468106.

STATION 4, PLAN 1, RT10 6

OUTFLOWS									
1106.	1106.	1107.	1629.	4767.	7662.	13133.	42566.	129717.	206251.
273411.	325289.	332665.	269365.	225160.	169005.	125332.	94706.	74563.	61503.
52801.	46744.	42266.	36737.	35787.	33212.	30900.	28766.	26640.	25033.
23352.	21786.	20320.	18964.	17694.	16509.	15403.	14372.	13409.	12511.
11674.	10892.	10102.	9482.	8847.	8254.	7702.	7186.	6705.	6256.

PEAK	6-HOUR	24-HOUR	72-HOUR	TOTAL VOLUME
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McFARLAND-JOHNSON ENGINEERS, INC.

CrS	332605.	329587.	299404.	191505.	3000456.
CAS	9320.	9333.	8400.	5425.	84903.
14Ches		1.54	6.69	12.04	10.75
41		46.74	169.80	320.02	425.54
AC-FF		103432.	593978.	1139890.	1487829.
Imus Cu M	201590.	732060.	1400033.	1835210.	

SUB-AREA RUNOFF COMPUTATION

MENDOCINE CREEK INFLOW HYDROGRAPH

ISIAU	ICOMP	IECO	ITAPE	JPLT	JFRI	INAME	ISTAGE	IAUD
4	0	0	0	0	0	1	0	0

HYDROGRAPH DATA									
IMIDS	IUNG	IAREA	SNAP	TRSDA	TRSPC	RATIO	ISNOW	ISAME	LOCAL
1	-1	200.00	0.00	200.00	0.00	0.000	0	1	0

PRECIP DATA

SPFE	PMS	Ko	K1e	K2e	K4e	K72	K96
0.00	21.50	77.00	37.00	97.00	107.00	0.00	0.00

TRSPC COMPUTED BY THE PROGRAM IS 0.888

LOSS DATA										
LRUPT	SIRKR	DURKR	KIIL	GRAIN	SFRAS	RIIDR	SIRIL	CNSIL	ALS4X	KTIME
0	0.00	0.00	1.00	0.00	0.00	1.00	1.00	0.10	0.00	0.00

100.	500.	3000.	6300.	5600.	3000.	2400.	1700.	1300.	1000.
700.	400.								

UNIT GRAPH TOTALS 27200. CFS OR 0.97 INCHES OVER THE AREA

RECEDITION DATA										
STRTD=	-1.00	QRCSH=	-0.10	RIIDR=	2.00					

END-OF-PERIOD FLOW													
MO.DA	HR.MN	PERIOD	RAIN	EXCS	LOSS	CMP Q	MO.DA	HR.MN	PERIOD	RAIN	EXCS	LOSS	CMP Q
1.01	6.00	1	0.00	0.00	0.08	243.	1.07	12.00	26	0.00	0.00	0.00	5421.
1.01	12.00	2	0.20	0.00	0.20	226.	1.07	18.00	27	0.00	0.00	0.00	5056.
1.01	18.00	3	1.52	0.48	1.04	259.	1.08	0.00	28	0.00	0.00	0.00	4719.
1.02	0.00	4	0.12	0.00	0.12	436.	1.08	6.00	29	0.00	0.00	0.00	4403.
1.02	6.00	5	0.76	0.16	0.60	1919.	1.08	12.00	30	0.00	0.00	0.00	4108.
1.02	12.00	6	1.91	1.31	0.60	3392.	1.08	18.00	31	0.00	0.00	0.00	3833.
1.02	18.00	7	14.70	14.10	0.00	5486.	1.09	0.00	32	0.00	0.00	0.00	3576.
1.03	0.00	8	1.15	0.55	0.60	14711.	1.09	6.00	33	0.00	0.00	0.00	3337.
1.03	6.00	9	0.00	0.00	0.00	61462.	1.09	12.00	34	0.00	0.00	0.00	3113.
1.03	12.00	10	0.00	0.00	0.00	99624.	1.09	18.00	35	0.00	0.00	0.00	2905.
1.03	18.00	11	0.00	0.00	0.00	88216.	1.10	0.00	36	0.00	0.00	0.00	2710.
1.04	0.00	12	0.00	0.00	0.00	57607.	1.10	6.00	37	0.00	0.00	0.00	2529.
1.04	6.00	13	0.00	0.00	0.00	36569.	1.10	12.00	38	0.00	0.00	0.00	2300.
1.04	12.00	14	0.30	0.00	0.00	27425.	1.10	18.00	39	0.00	0.00	0.00	2202.
1.04	18.00	15	0.00	0.00	0.00	20706.	1.11	0.00	40	0.00	0.00	0.00	2054.
1.05	0.00	16	0.00	0.00	0.00	15872.	1.11	6.00	41	0.00	0.00	0.00	1917.
1.05	6.00	17	0.00	0.00	0.00	11016.	1.11	12.00	42	0.00	0.00	0.00	1788.

McFARLAND-JOHNSON ENGINEERS, INC.

1.03	12.00	15	0.00	0.00	0.00	9430.	1.11	10.00	43	0.00	0.00	0.00	1068.
1.05	10.00	19	0.00	0.00	0.00	5500.	1.12	0.00	44	0.00	0.00	0.00	1557.
1.06	0.00	20	0.00	0.00	0.00	5210.	1.14	0.00	45	0.00	0.00	0.00	1452.
1.08	0.00	21	0.00	0.00	0.00	7550.	1.12	12.00	46	0.00	0.00	0.00	1355.
1.09	12.00	22	0.00	0.00	0.00	7153.	1.12	10.00	47	0.00	0.00	0.00	1264.
1.10	10.00	23	0.00	0.00	0.00	6074.	1.13	0.00	48	0.00	0.00	0.00	1180.
1.07	0.00	24	0.00	0.00	0.00	6227.	1.13	0.00	49	0.00	0.00	0.00	1101.
1.01	0.00	25	0.00	0.00	0.00	5610.	1.13	12.00	50	0.00	0.00	0.00	1027.

SUM 20.42 10.59 3.83 574150.
(519.)(421.)(97.)(10258.28)

	PEAK	6-HOUR	24-HOUR	72-HOUR	TOTAL VOLUME
CFS	93524.	93920.	73920.	37679.	573518.
CMS	2621.	2660.	2093.	1907.	16240.
INCHES		3.36	10.53	16.18	20.52
MM		85.35	208.73	410.90	521.19
AC-FI		45572.	146031.	224207.	264389.
INCHES CU M		57440.	180870.	276555.	350789.

	HYDROGRAPH AT STA 4 FOR PLAN 1, RTIG 1								
49.	45.	52.	87.	384.	678.	1097.	2942.	12292.	19925.
17643.	11561.	7734.	5485.	4153.	3174.	2203.	1988.	1761.	1643.
1533.	1431.	1335.	1245.	1162.	1084.	1012.	944.	881.	822.
167.	715.	607.	623.	581.	542.	506.	472.	440.	411.
303.	355.	334.	311.	290.	271.	253.	236.	220.	205.

	PEAK	6-HOUR	24-HOUR	72-HOUR	TOTAL VOLUME
CFS	19925.	18784.	14786.	7530.	114704.
CMS	564.	534.	419.	213.	3248.
INCHES		0.67	2.12	3.24	4.10
MM		17.07	53.75	82.18	104.24
AC-FI		9314.	29327.	44841.	56878.
INCHES CU M		11489.	36174.	55311.	70158.

	HYDROGRAPH AT STA 4 FOR PLAN 1, RTIG 2								
85.	79.	91.	153.	672.	1167.	1920.	5149.	21512.	34868.
30676.	20232.	13534.	9599.	7205.	5555.	3655.	3303.	3082.	2876.
2683.	2503.	2336.	2179.	2033.	1897.	1770.	1652.	1541.	1438.
1342.	1252.	1168.	1090.	1017.	949.	885.	826.	771.	719.
671.	620.	584.	545.	508.	474.	443.	413.	385.	359.

	PEAK	6-HOUR	24-HOUR	72-HOUR	TOTAL VOLUME
CFS	34666.	32872.	25875.	13168.	200731.
CMS	967.	931.	733.	373.	5684.
INCHES		1.18	3.70	5.66	7.18
MM		29.87	94.06	143.81	182.42
AC-FI		16300.	51322.	78472.	99530.
INCHES CU M		20106.	63305.	96794.	122776.

	HYDROGRAPH AT STA 4 FOR PLAN 1, RTIG 3								
121.	113.	129.	218.	959.	1096.	2743.	7355.	30731.	49812.
44108.	26993.	19335.	13715.	10393.	7930.	5505.	4719.	4403.	4108.
3633.	3570.	3357.	3113.	2905.	2710.	2529.	2360.	2202.	2054.
1917.	1758.	1600.	1557.	1452.	1355.	1264.	1180.	1101.	1027.

McFARLAND-JOHNSON ENGINEERS, INC.

950.	054.	054.	170.	720.	510.	032.	590.	550.	514.
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		PEAK	6-HOUR	24-HOUR	72-HOUR	TOTAL VOLUME
CFS	49812.	40960.	36964.	18540.	286759.	
CFS	1411.	1330.	1047.	533.	8120.	
INCHES		1.08	5.29	8.09	10.29	
INCHES		42.58	134.37	205.45	260.50	
AC-FI		23200.	73317.	112103.	142195.	
THOUS CU M		26723.	90435.	136270.	175394.	

HYDROGRAPH AT STA 4 FOR PLAN 1, R110 4									
158.	147.	108.	283.	1247.	2205.	3500.	9562.	39950.	64756.
57340.	37574.	25135.	17620.	13498.	10317.	7100.	6135.	5724.	5341.
4963.	4049.	4338.	4047.	3770.	3523.	3286.	3067.	2662.	2670.
2491.	2325.	2169.	2024.	1888.	1762.	1644.	1534.	1431.	1335.
1240.	1152.	1084.	1012.	944.	881.	822.	767.	715.	608.

		PEAK	6-HOUR	24-HOUR	72-HOUR	TOTAL VOLUME
CFS	64750.	61048.	48053.	24491.	372787.	
CFS	1834.	1729.	1301.	694.	10556.	
INCHES		2.18	6.58	10.52	13.34	
INCHES		55.48	174.08	267.08	338.78	
AC-FI		30272.	95312.	145734.	184953.	
THOUS CU M		37340.	117500.	179701.	228013.	

HYDROGRAPH AT STA 4 FOR PLAN 1, R110 5									
194.	181.	207.	349.	1535.	2714.	4389.	11709.	49169.	79699.
70573.	46245.	39335.	21940.	16613.	12697.	6613.	7550.	7045.	5573.
6133.	5722.	5339.	4961.	4648.	4337.	4046.	3775.	3522.	3287.
3000.	2801.	2609.	2491.	2324.	2166.	2023.	1866.	1701.	1643.
1533.	1431.	1335.	1245.	1162.	1084.	1012.	944.	881.	822.

		PEAK	6-HOUR	24-HOUR	72-HOUR	TOTAL VOLUME
CFS	79699.	75136.	59142.	30143.	458615.	
CFS	2257.	2126.	1675.	854.	12992.	
INCHES		2.69	8.46	12.94	16.42	
INCHES		68.28	214.99	328.72	416.96	
AC-FI		37257.	117307.	179360.	227511.	
THOUS CU M		45950.	144696.	221244.	280631.	

HYDROGRAPH AT STA 4 FOR PLAN 1, R110 6									
243.	220.	259.	436.	1919.	3392.	5460.	14711.	61462.	99624.
88210.	57607.	38009.	27425.	20766.	15872.	11016.	9438.	8806.	8216.
7000.	7153.	6074.	5227.	5610.	5421.	5056.	4719.	4403.	4106.
3833.	3570.	3337.	3113.	2905.	2710.	2529.	2360.	2202.	2054.
1917.	1766.	1008.	1557.	1452.	1355.	1264.	1180.	1101.	1027.

		PEAK	6-HOUR	24-HOUR	72-HOUR	TOTAL VOLUME
CFS	99624.	93920.	723.	37679.	573519.	
CFS	2821.	2660.	2093.	1067.	16240.	
INCHES		3.36	10.58	16.18	20.52	
INCHES		65.35	208.73	410.90	521.19	
AC-FI		46572.	146634.	224207.	284389.	
THOUS CU M		57446.	180670.	276555.	350759.	

***** SWO-AREA RUNOFF COMPUTATION *****

JASKA CREEK UNIT HYDROGRAPH

HYDRO	ISIAG	ICU	RECUN	1TAPE	JPLU	JFLU	INAME	ISAGE	IAUTO
1	4	4	0	0	0	0	1	0	0
HYDRO	LNU	PARCA	SNAP	HYDROGRAPH DATA					
1	-1	215.00	0.00	215.00	0.00	0.00	0.00	0.00	0
SPFC	PAR	Ro		PRECIP DATA					
0.00	21.80	78.00	88.00	R12	R24	R48	R72	R96	
				0.00	0.00	0.00	0.00	0.00	

TRSPC COMPUTED BY THE PROGRAM IS 0.884
TRSPC

TRSPC COMPUTED BY THE PROGRAM IS 0.884

LRUP1	Stn#R	DLINK	RTJL	ERALD	LOSS DATA	STRL	CNSL	ALSMX	RTIMP
0	0.00	0.00	1.00	0.00	0.00	1.00	1.00	0.10	0.00
1.00.	400.	1200.	2600.	4200.	GIVEV UNIT GRAPH, NUNGU= 12	3000.	2100.	1500.	1100.
800.	UNITS GRAPH TOTALS 21900. CFS OR 0.95 INCHES OVER THE AREA								

STRLS=	-1.00	RECESSION DATA	END-OF-PERIOD FLOW	HR.MN	PERIOD	RAIN	EXCS	LOSS	CUMP Q
		GRCSL= -0.10	HRCSL= 2.00						

40.0A	HR.MN	PERIOD	RAIN	EXCS	LOSS	END-OF-PERIOD FLOW	HR.MN	PERIOD	RAIN	EXCS	LOSS	CUMP Q
1.01	0.00	1	0.00	0.00	0.00	201.	1.07	12.00	26	0.00	0.00	3999.
1.01	12.00	2	0.20	0.00	0.20	187.	1.07	16.00	27	0.00	0.00	3731.
1.01	18.00	3	1.53	0.49	1.04	224.	1.08	0.00	28	0.00	0.00	3481.
1.02	0.00	4	0.12	0.00	0.12	360.	1.08	b.00	29	0.00	0.00	3248.
1.02	6.00	5	0.77	0.17	0.60	70.	1.08	12.00	30	0.00	0.00	3031.
1.02	12.00	6	1.93	1.33	0.60	1721.	1.08	16.00	31	0.00	0.00	2828.
1.02	18.00	7	15.03	14.43	0.60	4379.	1.09	0.00	32	0.00	0.00	2638.
1.03	0.00	8	1.16	0.56	0.60	10089.	1.09	6.00	33	0.00	0.00	2462.
1.03	6.00	9	0.00	0.00	0.00	23562.	1.09	12.00	34	0.00	0.00	2297.
1.03	12.00	10	0.00	0.00	0.00	4850.	1.09	16.00	35	0.00	0.00	2143.
1.03	18.00	11	0.00	0.00	0.00	b902.	1.10	0.00	36	0.00	0.00	2000.
1.04	0.00	12	0.00	0.00	0.00	6791.	1.10	6.00	37	0.00	0.00	1866.
1.04	6.00	13	0.00	0.00	0.00	49146.	1.10	12.00	36	0.00	0.00	1741.
1.04	12.00	14	0.00	0.00	0.00	3475.	1.10	18.00	39	0.00	0.00	1624.
1.04	18.00	15	0.00	0.00	0.00	24463.	1.11	0.00	40	0.00	0.00	1515.
1.05	0.00	16	0.00	0.00	0.00	17924.	1.11	b.00	41	0.00	0.00	1414.
1.05	6.00	17	0.00	0.00	0.00	12664.	1.11	12.00	42	0.00	0.00	1319.
1.05	12.00	18	0.00	0.00	0.00	7721.	1.11	18.00	43	0.00	0.00	1231.
1.05	18.00	19	0.00	0.00	0.00	b497.	1.12	0.00	44	0.00	0.00	1148.
1.06	0.00	20	0.00	0.00	0.00	0061.	1.12	b.00	45	0.00	0.00	1072.
1.06	6.00	21	0.00	0.00	0.00	5650.	1.12	12.00	46	0.00	0.00	1000.
1.06	12.00	22	0.00	0.00	0.00	5277.	1.12	18.00	47	0.00	0.00	933.
1.06	18.00	23	0.00	0.00	0.00	4945.	1.13	0.00	48	0.00	0.00	879.
1.07	0.00	24	0.00	0.00	0.00	4594.	1.13	0.00	49	0.00	0.00	812.

MFARLAND-JOHNSON ENGINEERS, INC.

1.07	0.00	25	0.00	0.00	0.00	4200.	1.13	12.00	50	0.00	0.00	0.00	750.
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SUM 20.81 16.97 3.63 460354.
(529.)(431.)(97.)(13027.56)

	PEAK	6-HOUR	24-HOUR	72-HOUR	TOTAL VOLUME
CFS	09052.	09497.	50907.	30935.	459554.
CMS	1950.	1940.	1611.	670.	13034.
INCHES		2.96	9.05	10.00	19.83
AM		15.28	250.16	407.95	505.07
AC-FI		33965.	112873.	184074.	227893.
IMJUS CU 4		41896.	139227.	227051.	281102.

	MEASUREMENT AT STA	4 FOR PLAN 1, RIIO 1							
40.	37.	45.	72.	152.	344.	870.	2018.	4712.	9700.
13610.	13582.	9829.	0895.	487.	3535.	2577.	1544.	1299.	1212.
1131.	1055.	965.	919.	857.	800.	746.	690.	650.	606.
500.	526.	492.	459.	429.	400.	373.	348.	325.	303.
263.	204.	240.	230.	214.	200.	187.	174.	162.	152.

	PEAK	6-HOUR	24-HOUR	72-HOUR	TOTAL VOLUME
CFS	13610.	13693.	11381.	6187.	91917.
CMS	391.	380.	322.	175.	2605.
INCHES		0.59	1.97	3.21	3.98
AM		15.06	50.03	81.59	101.01
AC-FI		0793.	22575.	30815.	45579.
IMJUS CU 4		0379.	27845.	45410.	56220.

	MEASUREMENT AT STA	4 FOR PLAN 1, RIIO 2							
70.	65.	76.	120.	250.	603.	1533.	3531.	8247.	16975.
24179.	23709.	17201.	12066.	8569.	6213.	4510.	2702.	2274.	2122.
1979.	1847.	1723.	1600.	1500.	1400.	1300.	1210.	1137.	1061.
990.	923.	302.	804.	750.	700.	653.	609.	568.	530.
495.	402.	431.	402.	375.	350.	320.	305.	284.	265.

	PEAK	6-HOUR	24-HOUR	72-HOUR	TOTAL VOLUME
CFS	24179.	23974.	19917.	10627.	160654.
CMS	600.	679.	564.	307.	4555.
INCHES		1.04	3.45	5.62	6.90
AM		26.35	67.55	142.78	176.77
AC-FI		11880.	39500.	64426.	79763.
IMJUS CU 4		14603.	46729.	79408.	98386.

	MEASUREMENT AT STA	4 FOR PLAN 1, RIIO 3							
100.	94.	112.	180.	360.	651.	2189.	5044.	11781.	24250.
34541.	33956.	24573.	17237.	12242.	8966.	6442.	3881.	3248.	3031.
2628.	2638.	2462.	2297.	2143.	2000.	1866.	1741.	1624.	1515.
1414.	1319.	1231.	1140.	1072.	1000.	933.	870.	812.	750.
707.	660.	615.	574.	536.	500.	466.	435.	408.	379.

	PEAK	6-HOUR	24-HOUR	72-HOUR	TOTAL VOLUME
CFS	34541.	34248.	26453.	15407.	229792.
CMS	976.	970.	806.	438.	6507.
INCHES		1.48	4.92	8.03	9.94
AM		37.64	125.08	20	252.54

MFARLAND-JOHNSON ENGINEERS, INC.

AC-51	10983.	56436.	94051.	113947.
InGoo Cu 4	20948.	57013.	113526.	140551.

SICHERHEIT AL SIA										FDP PLATZ 1, R110 4	
130.	122.	140.	234.	494.	1114.	2466.	6558.	15315.	31525.		
44944.	44142.	31945.	22409.	15914.	11550.	8375.	5019.	4223.	3940.		
3070.	3430.	3200.	2980.	2780.	2599.	2425.	2283.	2111.	1970.		
1830.	1715.	1600.	1493.	1393.	1300.	1213.	1131.	1055.	985.		
919.	857.	800.	746.	670.	650.	600.	566.	523.	492.		

	PEAK	0-HOUR	24-HOUR	72-HOUR	TOTAL VOLUME
CFS	44904.	44523.	36949.	20107.	296730.
CFS	1272.	1261.	1047.	559.	8459.
INCHES		1.93	6.40	10.44	12.93
44		48.93	102.00	205.17	328.30
AC-FI		22078.	73367.	119648.	148130.
INCHES CU A		27232.	96497.	147553.	182715.

MURDOCK & STA				4 FOR PLATE 1, R110 S					
100.	150.	179.	268.	603.	1377.	3503.	8071.	15549.	35800.
55266.	54329.	39317.	27500.	19537.	14339.	10308.	6177.	5197.	4849.
4524.	4221.	3939.	3675.	3429.	3199.	2955.	2785.	2579.	2425.
2202.	2111.	1969.	1837.	1714.	1600.	1493.	1393.	1299.	1212.
1131.	1055.	985.	919.	857.	803.	740.	690.	650.	600.

	PEAK CFS	6-HOUR CFS	24-HOUR CFS	72-HOUR CFS	INITIAL VOLUME
	55200.	54798.	45525.	24748.	367657.
CFS	1555.	1552.	1269.	701.	10411.
INCHES		2.37	7.68	12.85	15.91
AK		60.22	200.12	326.35	404.00
AC-FI		27172.	50298.	147259.	182314.
INCHES CU A		33517.	111381.	181641.	224481.

HÜDRUGRAFEN AT SIA				4 FDR PLAN 1, RTIU 6					
201.	107.	224.	300.	700.	1721.	4379.	10059.	23502.	48500.
69002.	67911.	49145.	34475.	24483.	17924.	12864.	7721.	6497.	6001.
5050.	5277.	4923.	4594.	3280.	3999.	3731.	3481.	3248.	3031.
2820.	2058.	2402.	2297.	2143.	2000.	1866.	1741.	1624.	1515.
1414.	1319.	1231.	1148.	1072.	1000.	933.	870.	813.	754.

	PEAK	6-HOUR	24-HOUR	72-HOUR	TOTAL	VOLUME
CFS	69002.	68497.	56974.	30935.		459544.
CHS	1950.	1940.	1611.	676.		13014.
INCHES		2.96	9.85	10.06		19.88
MM		75.26	250.16	407.95		505.07
AC-FI		33905.	112873.	161074.		227093.
INCHES CU M		31896.	139227.	17051.		241102.

SUB-AREA RUNOFF COMPUTATION
McFARLAND-JOHNSON ENGINEERS INC.

LUDWIG UNITGRAPH

ISFAS	ICOFP	IECOS	IIAPC	JPLI	JPRI	ISAW	ISAGE	IAUT
*	0	0	0	0	0	1	0	0

HYDROGRAPH DATA

ISFAS	ICOFP	IECOS	IIAPC	JPLI	JPRI	ISAW	ISAGE	IAUT
1	-1	71.00	0.00	71.00	0.00	0.000	0	0

PRECIP DATA

SPF	PMS	RS	R12	R24	R48	R72	R96
0.00	24.50	92.00	102.00	113.00	124.00	0.00	0.00

PRECIP COMPUTED BY THE PROGRAM IS 0.359

LOSS DATA

LRUPI	SIRRA	ULRRA	WFLR	EMAI	SIRAS	RFLRA	SIRIL	CASIL	ALSRX	RFLIP
0	0.00	0.00	1.00	0.00	0.00	1.00	1.00	0.10	0.00	0.00

GIVEN UNIT GRAPH, NUMBER = 8
 400. 2400. 2300. 1200. 700. 400. 200. 100.
 UNIT GRAPH TOTALS 7700. CFS OR 1.31 INCHES OVER THE AREA

RECEDITION DATA
 SIRI = -1.50 JMC54 = -0.10 RFLOR = 2.00

MJD	HR.MN	PERIOD	RAIN	EXCS	LOSS	END-JF-PERIODS PLS		MJD	HR.MN	PERIOD	RAIN	EXCS	LOSS	COMP	
						COF	P								
1.01	0.00	1	0.00	0.00	0.00	99.		1.07	12.00	26	0.00	0.00	0.00	0.00	1726.
1.01	12.00	2	0.10	0.00	0.10	93.		1.07	15.00	27	0.00	0.00	0.00	0.00	1010.
1.01	16.00	3	1.00	0.50	1.07	319.		1.06	0.00	26	0.00	0.00	0.00	0.00	1533.
1.02	0.00	4	0.12	0.00	0.12	1475.		1.06	0.00	29	0.00	0.00	0.00	0.00	1432.
1.02	0.00	5	0.01	0.21	0.00	1497.		1.06	12.00	36	0.00	0.00	0.00	0.00	1303.
1.02	12.00	6	1.35	1.25	0.00	1775.		1.06	16.00	31	0.00	0.00	0.00	0.00	1221.
1.04	18.00	7	10.50	10.30	0.00	10505.		1.09	0.00	32	0.00	0.00	0.00	0.00	1139.
1.03	0.00	8	1.22	0.62	0.00	42904.		1.09	6.00	33	0.00	0.00	0.00	0.00	1033.
1.03	6.00	9	0.00	0.00	0.00	4095.		1.09	12.00	34	0.00	0.00	0.00	0.00	991.
1.03	12.00	10	0.00	0.00	0.00	22152.		1.09	18.00	35	0.00	0.00	0.00	0.00	925.
1.03	16.00	11	0.00	0.00	0.00	12502.		1.10	0.00	30	0.00	0.00	0.00	0.00	853.
1.04	0.00	12	0.00	0.00	0.00	7303.		1.10	6.00	37	0.00	0.00	0.00	0.00	805.
1.04	6.00	13	0.00	0.00	0.00	4250.		1.10	12.00	38	0.00	0.00	0.00	0.00	751.
1.04	12.00	14	0.00	0.00	0.00	3965.		1.10	18.00	39	0.00	0.00	0.00	0.00	701.
1.04	18.00	15	0.00	0.00	0.00	3700.		1.11	0.00	40	0.00	0.00	0.00	0.00	554.
1.05	0.00	16	0.30	0.00	0.00	3452.		1.11	6.00	41	0.00	0.00	0.00	0.00	510.
1.05	6.00	17	0.00	0.00	0.00	3221.		1.11	12.00	42	0.00	0.00	0.00	0.00	559.
1.05	12.00	18	0.00	0.00	0.00	3305.		1.11	18.00	43	0.00	0.00	0.00	0.00	531.
1.05	18.00	19	0.00	0.00	0.00	2804.		1.12	0.00	44	0.00	0.00	0.00	0.00	490.
1.05	0.00	20	0.00	0.00	0.00	2615.		1.12	5.00	45	0.00	0.00	0.00	0.00	452.
1.05	6.00	21	0.00	0.00	0.00	241.		1.12	12.00	46	0.00	0.00	0.00	0.00	432.
1.05	12.00	22	0.00	0.00	0.00	2276.		1.12	18.00	47	0.00	0.00	0.00	0.00	403.
1.05	18.00	23	0.00	0.00	0.00	2125.		1.13	3.00	48	0.00	0.00	0.00	0.00	376.
1.07	0.00	24	0.00	0.00	0.00	1953.		1.13	6.00	49	0.00	0.00	0.00	0.00	351.
1.07	6.00	25	0.00	0.00	0.00	1850.		1.13	12.00	50	0.00	0.00	0.00	0.00	327.

SUM 22.69 19.04 3.55 200339.
 (501.)(484.)(98.)(5085.82)

PEAK	0-HOUR	24-HOUR	72-HOUR	TOTAL VOLUME
CFS 42.64.	41985.	2944.	.3143.	200656.
CU.S 1217.	1189.	834.		5063.

McFARLAND-JOHNSON ENGINEERS, INC.

	INCHES	5.50	15.43	20.06	26.29
	in	139.72	391.94	524.84	667.00
	AC-FT	20019.	56401.	78203.	99514.
THOUS Cu M		25050.	72030.	90403.	122743.

	HYDROGRAPH AT STA			4 FOR PLAN 1, RTIO 1				
20.	19.	64.	295.	299.	355.	2101.	6597.	6197.
2500.	1461.	850.	793.	740.	690.	644.	601.	561.
400.	450.	125.	397.	370.	345.	322.	301.	280.
244.	228.	213.	198.	185.	173.	161.	150.	140.
122.	114.	100.	99.	92.	86.	81.	75.	70.

	PEAK	6-HOUR	24-HOUR	72-HOUR	TOTAL	VOLUME
CFS	8597.	8391.	5839.	2629.	40137.	
CMS	243.	238.	167.	74.	1137.	
INCHES		1.10	3.09	4.13	5.25	
MM		27.94	78.39	104.97	133.57	
AC-FT		4164.	11630.	15641.	19903.	
THOUS Cu M		5136.	14407.	19293.	24550.	

	HYDROGRAPH AT STA			4 FOR PLAN 1, RTIO 2				
35.	32.	112.	510.	524.	621.	3677.	1504.	14345.
4461.	2550.	1468.	1388.	1295.	1208.	1127.	1052.	981.
854.	737.	744.	694.	647.	604.	564.	520.	491.
421.	399.	372.	347.	324.	302.	282.	263.	245.
214.	199.	180.	173.	162.	151.	141.	131.	123.

	PEAK	6-HOUR	24-HOUR	72-HOUR	TOTAL	VOLUME
CFS	15044.	14095.	10305.	4600.	70240.	
CMS	420.	416.	292.	130.	1989.	
INCHES		1.93	5.40	7.23	9.20	
MM		48.90	137.18	183.69	233.75	
AC-FT		7287.	20440.	27371.	34830.	
THOUS Cu M		6988.	25213.	33762.	42962.	

	HYDROGRAPH AT STA			4 FOR PLAN 1, RTIO 3				
50.	46.	159.	738.	748.	888.	5252.	21492.	20493.
6461.	3652.	2125.	1983.	1850.	1726.	1610.	1503.	1402.
1221.	1134.	1063.	991.	925.	863.	805.	751.	701.
510.	569.	531.	496.	462.	432.	403.	376.	351.
205.	285.	200.	248.	231.	216.	201.	188.	175.

	PEAK	6-HOUR	24-HOUR	72-HOUR	TOTAL	VOLUME
CFS	21492.	20992.	14722.	6571.	100343.	
CMS	609.	594.	417.	166.	2841.	
INCHES		2.75	7.72	10.33	13.15	
MM		69.86	195.97	262.42	333.93	
AC-FT		1109.	29200.	39102.	49757.	
THOUS Cu M		12840.	36018.	48251.	61374.	

	HYDROGRAPH AT STA			4 FOR PLAN 1, RTIO 4				
55.	60.	207.	959.	973.	1154.	6826.	27940.	26640.
6321.	4747.	703.	2578.	2405.	2244.	2094.	1953.	1823.

MFARLAND-JOHNSON ENGINEERS, INC.

1587.	1460.	1301.	1209.	1212.	1122.	1047.	977.	911.	850.
193.	140.	91.	84.	501.	501.	523.	460.	456.	425.
347.	379.	345.	322.	301.	280.	252.	244.	229.	213.

	PERIOD	5-HOUR	24-HOUR	72-HOUR	TOTAL VOLUME
CPS	21940.	21290.	19130.	8543.	130440.
CMS	791.	713.	542.	242.	3094.
INCHES		3.50	16.03	13.43	17.09
MM		90.82	254.75	341.15	434.11
AC-PS		13532.	37900.	50832.	84664.
INCHES CUM		16092.	46823.	62101.	79780.

HILDEGARD AT STA			4 FOR PLAN 1, R10 5		
79.	74.	255.	1100.	1197.	1420.
102+1.	543.	3400.	3172.	7950.	2702.
1953.	1022.	1700.	1580.	1480.	1381.
70.	911.	255.	793.	740.	650.
400.	156.	425.	397.	370.	345.

	PEAK	0-HOUR	24-HOUR	72-HOUR	TOTAL	VOLUME
CFS	33387.	33584.	23555.	10514.		160549.
CMS	974.	951.	657.	298.		4546.
INCHES		4.40	12.34	10.53		21.03
MM		111.78	313.55	419.87		534.29
AC-F1		16055.	46721.	62503.		79611.
THOUS CFS M		20544.	57029.	77170.		98199.

		HYDROGRAPH AT STA 4 FOR PLAN 1, RFD 0							
99.	93.	319.	1475.	1497.	1776.	10505.	42984.	40985.	22152.
12802.	7305.	4250.	3905.	3700.	3454.	3221.	3005.	2804.	2616.
2441.	2276.	2125.	1983.	1850.	1726.	1610.	1503.	1402.	1308.
1221.	1134.	1003.	991.	945.	803.	605.	751.	701.	654.
010.	509.	531.	490.	462.	432.	403.	376.	351.	327.

	PEAK	6-HOUR	24-HOUR	72-HOUR	TOTAL	VOLUME
CFS	42984.	41985.	29444.	13143.	200680.	
CMS	1217.	1189.	834.	372.	563.	
INCHES		5.50	15.43	20.00	26.29	
"M		139.72	391.94	524.84	667.89	
AC-FT		20819.	58411.	78203.	99514.	
1000S CU M		25680.	72030.	96483.	12748.	

SUB-AREA Budget COMPARISON

BLACK CREEK LIFE LINE HYDROGRAPH

1STAG	1COMP	1ECON	1TAPE	JPLI	JPRI	1NAME	1STAGE	1AUTO
4	0	0	0	0	0	1	0	0

HYDROGRAPH DATA
IMIDG LUNG IAREA SNAP TRSDA TRSPC KEY ISNOW ISAME LOCAL
MCFARLAND-JOHNSON ENGINEERS, INC.

REGRESSION DATA										PRIOR = 2.00	
SIR, J = -1.00					END-OF-PERIOD FLUX					LOSS	
HR. MN	PERIOD	RAIN	EXCS	LOSS	COMP Q	MJ.DA	HR. MN	PERIOD	RAIN	EXCS	LOSS
0.00	1	0.08	0.00	0.08	174.	1.07	12.00	20	0.00	0.00	3115.
12.00	2	0.21	0.00	0.21	163.	1.07	18.00	27	0.00	0.00	2906.
18.00	3	1.08	0.04	1.08	214.	1.08	0.00	24	0.00	0.00	2711.
0.00	4	0.12	0.00	0.12	391.	1.08	0.00	29	0.00	0.00	2530.
6.00	5	0.76	0.10	0.60	709.	1.08	12.00	30	0.00	0.00	2360.
12.00	6	1.90	1.30	0.60	1127.	1.08	16.00	31	0.00	0.30	2202.
18.00	7	15.41	14.81	0.60	3321.	1.09	0.00	32	0.00	0.00	2055.
0.00	8	1.14	0.54	0.00	8901.	1.09	0.00	33	0.00	0.00	1917.
6.00	9	0.66	0.00	0.66	17359.	1.09	12.00	34	0.00	0.00	1789.
12.00	10	0.00	0.00	0.00	24353.	1.09	18.00	35	0.00	0.00	1659.
18.00	11	0.00	0.00	0.00	31040.	1.10	0.00	36	0.00	0.00	1527.
0.00	12	0.00	0.00	0.00	49405.	1.10	0.00	37	0.00	0.00	1453.
6.00	13	0.00	0.00	0.00	48127.	1.10	12.00	36	0.00	0.00	1356.
12.00	14	0.00	0.00	0.00	51778.	1.10	18.00	39	0.00	0.00	1265.
18.00	15	0.00	0.00	0.00	43090.	1.11	0.00	40	0.00	0.00	1180.
0.00	16	0.00	0.00	0.00	33065.	1.11	6.00	41	0.00	0.00	1101.
6.00	17	0.00	0.00	0.00	3052.	1.11	12.00	42	0.00	0.00	1027.
12.00	18	0.00	0.00	0.00	14144.	1.11	18.00	43	0.00	0.00	959.
18.00	19	0.00	0.00	0.00	5066.	1.12	0.00	44	0.00	0.00	894.
0.00	20	0.00	0.00	0.00	4721.	1.12	6.00	45	0.00	0.00	835.
6.00	21	0.00	0.00	0.00	4405.	1.12	12.00	46	0.00	0.00	779.
12.00	22	0.00	0.00	0.00	4110.	1.12	18.00	47	0.00	0.00	726.
18.00	23	0.00	0.00	0.00	3834.	1.13	0.00	48	0.00	0.30	678.
0.00	24	0.00	0.00	0.00	3578.	1.13	6.00	49	0.00	0.00	632.
6.00	25	0.00	0.00	0.00	3338.	1.13	12.00	50	0.00	0.00	530.

PEAK	24-HOUR	72-HOUR	TOTAL	VOLUME
178.	4940.	28297.	406421.	406421.
1400.	1273.	801.	11565.	11565.
2.48	8.94	10.69	20.32	20.32
3.12	227.13	429.03	516.03	516.03
2470.	89137.	168379.	202523.	202523.
3055.	106949.	207852.	249898.	249898.

MCLELLAN AND JOHNSON ENGINEERS INC

HYDROGRAPH AT STA 4 FOR PLAN 1, RIO 1

35.	33.	43.	70.	142.	220.	004.	170.	3474.	4871.
6200.	6093.	9023.	10356.	0016.	0013.	4010.	2829.	1012.	944.
651.	622.	707.	716.	005.	023.	581.	542.	500.	472.
940.	411.	353.	358.	334.	311.	291.	271.	253.	236.
220.	205.	192.	179.	107.	150.	145.	136.	125.	115.

	PEAK	6-HOUR	24-HOUR	72-HOUR	TOTAL VOLUME
CFS	10356.	9991.	8984.	5559.	81684.
CMS	293.	283.	255.	100.	2313.
INCHES		0.50	1.79	3.38	4.00
MM		12.62	45.43	85.81	103.21
AC-FT		4954.	17827.	33670.	40505.
THOUS CU M		0111.	21990.	41538.	49962.

HYDROGRAPH AT STA 4 FOR PLAN 1, RIO 2

61.	57.	75.	137.	248.	305.	1162.	3115.	6076.	8524.
10864.	14103.	10845.	18122.	15082.	11573.	8008.	4950.	1771.	1052.
1542.	1438.	1342.	1252.	1168.	1090.	1017.	949.	885.	420.
771.	719.	671.	620.	564.	545.	509.	474.	443.	413.
385.	300.	330.	313.	292.	273.	254.	237.	221.	207.

	PEAK	6-HOUR	24-HOUR	72-HOUR	TOTAL VOLUME
CFS	15122.	17483.	15729.	9904.	142947.
CMS	513.	495.	445.	260.	4048.
INCHES		0.67	3.13	5.91	7.11
MM		22.09	79.50	150.17	180.02
AC-FT		8664.	31198.	58933.	70883.
THOUS CU M		10094.	38482.	72692.	87433.

HYDROGRAPH AT STA 4 FOR PLAN 1, RIO 3

87.	81.	107.	195.	354.	564.	1660.	4450.	8580.	12177.
15520.	20232.	24064.	25889.	21545.	16533.	11520.	7072.	2530.	2360.
2202.	2055.	1917.	1789.	1669.	1557.	1453.	1356.	1265.	1180.
1101.	1027.	959.	894.	835.	779.	720.	670.	632.	590.
551.	517.	479.	447.	417.	389.	363.	339.	316.	295.

	PEAK	6-HOUR	24-HOUR	72-HOUR	TOTAL VOLUME
CFS	25889.	24976.	22470.	14148.	204211.
CMS	733.	707.	636.	401.	5783.
INCHES		1.24	4.47	8.45	10.10
MM		31.56	113.57	214.52	258.03
AC-FT		12385.	44509.	84189.	101261.
THOUS CU M		15277.	54975.	103846.	124904.

HYDROGRAPH AT STA 4 FOR PLAN 1, RIO 4

113.	106.	139.	254.	161.	733.	2159.	5785.	11283.	15830.
20176.	26302.	31283.	33650.	26009.	21492.	14984.	9193.	3289.	3068.
2863.	2071.	2492.	2325.	2170.	2024.	1889.	1762.	1644.	1534.
1431.	1330.	1246.	1163.	1085.	1012.	944.	881.	822.	767.
716.	668.	623.	581.	542.	500.	472.	441.	411.	384.

	PEAK	6-HOUR	24-HOUR	72-HOUR	TOTAL VOLUME
CFS	33650.	32409.	29211.	16393.	265474.
CMS	953.	919.	827.		7517.

McFARLAND-JOHNSON ENGINEERS, INC.

I.Ches	1.02	5.01	10.98	13.21
A4	41.03	147.04	210.86	335.43
AC-FF	16100.	57939.	109440.	151040.
THOUS CU M	19800.	71401.	135000.	102375.

HYDROGRAPH AT STA 4 FOR PLAN 1, RT10 5									
140.	130.	313.	507.	902.	2057.	7120.	13887.	19482.	
24052.	32372.	30502.	41422.	34472.	20452.	16441.	11315.	4048.	3777.
3524.	3268.	3000.	2602.	2670.	2492.	2325.	2169.	2024.	1888.
1702.	1644.	1534.	1431.	1335.	1240.	1162.	1085.	1012.	944.
881.	822.	707.	710.	668.	623.	581.	542.	506.	472.

PEAK 6-HOUR 24-HOUR 72-HOUR				TOTAL VOLUME		
CFS	41422.	39902.	35952.	22038.	320737.	
CMS	1173.	1132.	1010.	541.	9252.	
I.Ches	1.99	7.15	13.51	16.25		
A4	50.49	161.71	343.24	412.64		
AC-FF	19810.	71310.	134703.	102018.		
THOUS CU M	24443.	67960.	106154.	199847.		

HYDROGRAPH AT STA 4 FOR PLAN 1, RT10 5									
174.	103.	214.	391.	709.	1127.	3321.	8901.	17359.	24353.
31040.	40455.	41127.	51778.	43090.	33055.	23052.	14144.	5060.	4711.
4405.	4110.	3934.	3578.	3338.	3115.	2900.	2711.	2530.	2360.
2202.	2000.	1917.	1789.	1569.	1557.	1453.	1356.	1265.	1180.
1101.	1027.	959.	894.	835.	779.	720.	678.	632.	590.

PEAK 6-HOUR 24-HOUR 72-HOUR				TOTAL VOLUME		
CFS	51778.	49953.	44940.	28297.	404421.	
CMS	1400.	1415.	1273.	801.	11505.	
I.Ches	2.48	8.94	16.89	20.32		
A4	63.12	227.13	429.05	510.05		
AC-FF	24770.	89137.	168379.	202523.		
THOUS CU M	30553.	109949.	207092.	249808.		

COMBINE HYDROGRAPHS

COMBINE FLOWS AT CONFLUENCE OF BLACK CREEK

ISTAO	ICUMP	IECON	ITAPE	JPLT	JPNT	I NAME	I STAGE	I AUTO
4	5	0	0	0	0	1	0	0

SUM OF 5 HYDROGRAPHS AT				4 PLAN 1 RT10 1					
305.	355.	424.	898.	1930.	3140.	7365.	23850.	54112.	77449.
88799.	92553.	89740.	80900.	66499.	52459.	39579.	29421.	22125.	18278.
15577.	13005.	12264.	11180.	10254.	9534.	8801.	8250.	7089.	7170.
6668.	5239.	5821.	5431.	5067.	4726.	4411.	4116.	3840.	3583.
3343.	3119.	2919.	2715.	2534.	2304.	2200.	2058.	1920.	1792.

PEAK 6-HOUR 24-HOUR 72-HOUR TOTAL VOLUME
McFARLAND-JOHNSON ENGINEERS, INC. 

	CFS	92553.	91147.	67507.	59553.	928533.
	C+S	2021.	2561.	2480.	1087.	26293.
	1.4ches		0.35	1.30	2.77	3.00
	MM		0.98	34.50	70.39	91.45
	AC-FT		45197.	173500.	354397.	460430.
	INDUS CU M		55749.	214230.	457142.	567931.

SUM OF 5 HYDROGRAPHS AT 4 PLAN 1 RT10 2					
038.	621.	743.	1572.	3378.	5494.
150032.	107131.	101320.	142532.	114139.	12888.
20007.	23073.	21337.	19502.	17983.	41737.
11704.	10919.	10137.	9504.	6800.	94690.
5050.	5459.	5093.	4752.	4434.	130285.
					37311.
					31160.
					13454.
					12547.
					6720.
					6270.
					3360.
					3135.

	PEAK	6-HOUR	24-HOUR	72-HOUR	TOTAL VOLUME
	CFS	167181.	104250.	150010.	104340.
	C+S	4754.	4051.	4435.	2955.
	1.4ches		0.64	2.43	4.86
	MM		10.18	61.70	123.32
	AC-FT		81440.	310032.	520005.
	INDUS CU M		100463.	383159.	765826.

SUM OF 5 HYDROGRAPHS AT 4 PLAN 1 RT10 3					
912.	868.	1001.	2245.	4825.	7849.
230201.	243187.	253110.	203019.	101342.	10412.
37790.	33548.	30338.	27787.	25053.	59625.
10719.	15598.	14552.	13517.	12666.	135526.
8358.	7798.	7276.	6789.	6334.	196273.
					51658.
					43647.
					19219.
					17923.
					9600.
					8958.
					4479.

	PEAK	6-HOUR	24-HOUR	72-HOUR	TOTAL VOLUME
	CFS	243187.	236149.	226036.	149162.
	C+S	6860.	6744.	6418.	4224.
	1.4ches		0.92	3.52	6.94
	MM		23.46	89.29	170.32
	AC-FT		110090.	449526.	887692.
	INDUS CU M		14562.	554462.	1094952.

SUM OF 5 HYDROGRAPHS AT 4 PLAN 1 RT10 4					
1185.	1154.	1360.	2919.	6273.	10204.
302763.	319040.	305070.	205160.	208482.	23935.
48579.	43302.	39274.	30037.	33306.	155184.
21734.	20277.	18918.	17551.	16468.	116722.
10865.	10137.	9459.	6625.	8234.	28762.
					26796.
					24982.
					23299.
					12481.
					11645.
					5822.

	PEAK	6-HOUR	24-HOUR	72-HOUR	TOTAL VOLUME
	CFS	319640.	312355.	297153.	194076.
	C+S	9051.	8845.	8414.	5496.
	1.4ches		1.21	4.61	9.03
	MM		30.76	117.07	229.38
	AC-FT		154887.	589395.	1154831.
	INDUS CU M		191050.	727007.	1424463.

MFARLAND-JOHNSON ENGINEERS, INC.



Sum OF 5 HYDROGRAPHS AT						PLAN 1 RIVER 5			
1459.	1420.	1090.	3593.	7721.	17559.	29459.	95400.	217920.	316450.
370059.	390000.	377020.	325948.	255165.	193031.	141005.	104733.	79709.	67700.
59192.	52951.	48148.	44235.	40940.	36021.	35300.	32973.	30744.	28075.
26749.	24950.	23204.	21724.	22090.	16911.	17045.	16403.	15301.	14332.
13372.	12477.	11541.	10802.	10134.	9450.	8622.	8232.	7581.	7160.

PEAK 6-HOUR			24-HOUR			72-HOUR			TOTAL VOLUME		
CFS	390000.	380047.	367992.	239014.	3714132.	CFS	11252.	10954.	10420.	6708.	105172.
14CH25				1.00	5.71			11.12			14.40
M				38.10	144.98			282.49			365.81
AC-FI				191625.	729902.			1422232.			1841710.
INDUS CUM				230013.	900321.			1754297.			2271726.

Sum OF 5 HYDROGRAPHS AT						PLAN 1 RIVER 6			
1023.	1775.	2122.	4491.	9051.	15694.	36823.	119250.	273085.	400579.
474010.	499775.	473078.	407068.	317200.	239317.	175504.	129014.	97729.	63118.
72903.	65500.	59524.	55113.	51071.	47472.	44206.	41203.	38429.	35840.
33435.	31194.	29104.	27155.	25336.	23039.	22056.	20579.	19201.	17915.
16715.	15590.	14552.	13577.	12608.	11820.	11028.	10290.	9600.	8958.

PEAK 6-HOUR			24-HOUR			72-HOUR			TOTAL VOLUME		
CFS	499775.	487193.	462852.	299032.	4642605.	CFS	14152.	13790.	13107.	8468.	131455.
14CH25				1.89	7.18			13.91			16.00
M				47.98	182.35			353.42			457.20
AC-FI				241503.	918053.			1779304.			2302148.
INDUS CUM				297959.	1132402.			2194613.			2639657.

HYDROGRAPH ROUTING

ROUTE COMBINE FLOWS TO COURT STREET DAY OUTLET USING MUSKINGUM METHOD

ISIAG	ICOMP	IECON	ITAPE	JPLT	JPRI	INAME	ISIAGE	IAUTO
5	1	0	0	0	0	1	0	0
ROUTING DATA								
JLOSS	CLLOSS	AVG	IRES	ISAME	IOPF	IPMP	LSTR	
0.0	0.000	0.00	0	1	0	0	0	
NSIPS	NSIDL	LAG	APSRK	X	ISK	SIURK	ISPRKAI	
1	0	0	6.930	0.010	0.000	0.	0	

STATION 5, PLAN 1, RIVER 1

OUTFLOU

305.	302.	376.	547.	1067.	1952.	3930.	10920.	27782.	50139.
70305.	82697.	87000.	80376.	78704.	67128.	53374.	42353.	32310.	24972.
20096.	10778.	14407.	12604.	11553.	10501.	9730.	9022.	8336.	7808.

McFARLAND-JOHNSON ENGINEERS, INC.

1270.	0700.	0929.	0904.	0505.	5159.	4795.	4474.	4174.	3894.
3034.	3390.	3103.	2901.	2754.	2509.	2397.	2237.	2037.	1947.

	PEAK	6-HOUR	24-HOUR	72-HOUR	TOTAL VOLUME
CFS	87050.	97117.	32871.	38490.	926707.
CMS	2408.	2467.	2341.	1050.	26241.
1.4CHES		0.34	1.29	2.12	3.59
MA		4.58	32.05	69.13	91.21
AC-FF		43199.	164578.	348040.	459524.
INDUS CUM		53265.	202757.	429201.	506814.

STATION 5, PLAN 1, RTD 2

	OUTFLOA								
030.	033.	002.	956.	1006.	3416.	5878.	19109.	48610.	89010.
124390.	147755.	157820.	154308.	136727.	110075.	92570.	71401.	54398.	42175.
34181.	28702.	24971.	22214.	20112.	18420.	17010.	15774.	14007.	13669.
12732.	11873.	11075.	10332.	9639.	8993.	8391.	7829.	7304.	6815.
0359.	5933.	5530.	5165.	4819.	4490.	4195.	3914.	3652.	3400.

	PEAK	6-HOUR	24-HOUR	72-HOUR	TOTAL VOLUME
CFS	157820.	156097.	147872.	102512.	1621737.
CMS	4469.	4420.	4187.	2903.	45922.
1.4CHES		0.61	2.29	4.17	6.29
MA		15.37	58.20	121.10	159.73
AC-FF		77403.	293300.	609951.	804167.
INDUS CUM		95476.	361780.	752403.	991925.

STATION 5, PLAN 1, RTD 3

	OUTFLOA								
912.	905.	940.	1308.	2669.	4360.	9620.	27299.	09327.	127741.
179525.	214220.	225351.	222737.	198501.	161044.	130106.	99740.	75049.	58748.
47621.	40450.	35299.	31522.	28615.	26201.	24267.	22517.	20945.	19510.
18107.	10900.	10521.	14759.	13770.	12547.	11987.	11184.	10435.	9730.
9084.	0470.	7908.	7379.	6864.	6423.	5993.	5592.	5217.	4868.

	PEAK	6-HOUR	24-HOUR	72-HOUR	TOTAL VOLUME
CFS	226651.	225794.	213710.	190006.	2316767.
CMS	0480.	6394.	6052.	4151.	65604.
1.4CHES		0.68	3.31	6.82	8.98
MA		22.24	84.20	173.27	228.18
AC-FF		111904.	423902.	872367.	1148610.
INDUS CUM		136105.	522670.	1070049.	1417036.

STATION 5, PLAN 1, RTD 4

	OUTFLOA								
1185.	1170.	1230.	1778.	3469.	6344.	12773.	35489.	90519.	165834.
235330.	281377.	300329.	291358.	258578.	213147.	167380.	127590.	90490.	74851.
61123.	51922.	45460.	40742.	37007.	34067.	31509.	29253.	27219.	25357.
23640.	22047.	20500.	19187.	17901.	16701.	15583.	14539.	13505.	12657.
11899.	11016.	10201.	9592.	6959.	9350.	7791.	7269.	6783.	6326.

PEAK 6-HOUR 24-HOUR 72-HOUR TOTAL VOLUME
MCFARLAND-JOHNSON ENGINEERS, INC. 

CrS	300349.	295544.	260005.	190/00.	3011795.
CsS	5504.	8371.	7929.	5404.	65285.
InCnS		1.15	4.34	0.08	11.08
"		29.14	110.31	225.40	290.03
AC-FT	146099.	555301.	1135099.		1493454.
InDUS Cu 4	180951.	665052.	1400123.		1842148.

STATION 5, PLAN 1, R110 5

OUTLET											
1459.	1447.	1513.	2109.	4279.	7607.	19721.	43678.	111500.	206170.		
291022.	349125.	512210.	359962.	318225.	261390.	204590.	155387.	117126.	90790.		
14212.	032125.	55543.	49866.	45474.	41848.	36136.	35980.	33493.	31203.		
29092.	27134.	25512.	23014.	22031.	20555.	19179.	17894.	10090.	15570.		
14535.	13501.	12053.	11806.	11915.	10277.	9589.	8947.	6346.	7789.		

	PEAK	6-HOUR	24-HOUR	72-HOUR	TOTAL VOLUME
CrS	372210.	300089.	346557.	234958.	3700826.
CsS	10540.	10306.	9613.	6653.	104960.
InCnS		1.42	5.38	10.93	14.37
"		36.06	136.53	277.09	365.09
AC-FT	1d1532.	667366.	1396098.		1d36096.
InDUS Cu 4	223910.	84787d.	1724528.		226725d.

STATION 5, PLAN 1, R110 6

OUTLET											
1623.	1503.	1592.	2736.	5337.	9759.	19051.	54590.	139658.	258827.		
307170.	440027.	450044.	451028.	397786.	325604.	254135.	192473.	144561.	111722.		
91301.	77944.	66101.	61902.	56571.	52155.	48335.	44930.	41636.	38991.		
30359.	33914.	31038.	29517.	27539.	25094.	23573.	22308.	20870.	19472.		
10108.	16952.	15016.	14757.	13769.	12847.	11987.	11104.	10435.	9730.		

	PEAK	6-HOUR	24-HOUR	72-HOUR	TOTAL VOLUME
CrS	400448.	400038.	435040.	293989.	4633535.
CsS	13205.	13027.	12336.	8325.	131207.
InCnS		1.73	0.76	13.68	17.97
"		45.31	171.03	337.46	456.36
AC-FT	228115.	664091.	1749355.		2297621.
InDUS Cu 4	201379.	1005841.	2157796.		2834073.

SUB-AREA RUNOFF COMPUTATION

LOCAL INFLOW HYDROGRAPH AT OUTLET OF COURT STREET DAM

ISFAG	ICOMP	ICOM	IIAPE	JPLT	JPNT	INAME	ISFAG	IAUDC
5	0	0	0	0	0	1	0	0

HYDROGRAPH DATA									
INIDU	ISMG	ISREA	SWAP	TRSDA	TRSPC	RATIO	ISNDW	ISAME	LOCAL
1	-1	01.00	0.00	61.00	0.00	0	0	1	0

McFARLAND-JOHNSON ENGINEERS, INC.

PRECIP DATA
 3000 1000 1000 1000 1000 1000 1000 1000 1000
 0.00 21.00 44.00 104.00 115.00 120.00 0.00 0.00
 PRECIP COMPUTED BY THE PROJECT IS 0.855

LOSS DATA

1500. 2300. 1100. 600. 400. 200. 100. 100.
UNIT GRAPH TOTALS 5800. CFS JR 1.04 1.4m/s OVER THE AREA

SIRTR= -2.00 PECESSION DATA
JRCSEN= -0.10 RIGSR= 2.00

MO.DA	HR.MN	PERIOD	RAIN	EXCS	LOSS	END-JF-PERIOD FLUX							
						CUM P	MO.DA	HR.MN	PERIOD	RAIN	EXCS	LOSS	CUM P
1.01	0.00	1	0.08	0.00	0.08	114.	1.07	12.00	26	0.00	0.00	0.00	1835.
1.01	12.00	2	0.10	0.00	0.16	100.	1.07	18.00	27	0.00	0.00	0.00	1713.
1.01	18.00	3	1.49	0.43	1.00	747.	1.08	0.00	28	0.00	0.00	0.00	1598.
1.02	0.00	4	0.11	0.00	0.11	1303.	1.08	6.00	29	0.00	0.00	0.00	1491.
1.02	6.00	5	0.08	0.26	0.00	985.	1.08	12.00	30	0.00	0.00	0.00	1391.
1.02	12.00	6	1.34	1.24	0.00	2907.	1.08	15.00	31	0.00	0.00	0.00	1298.
1.02	18.00	7	17.28	16.00	0.00	29030.	1.09	0.00	32	0.00	0.00	0.00	1211.
1.03	0.00	8	1.32	0.72	0.00	49404.	1.09	6.00	33	0.00	0.00	0.00	1130.
1.03	6.00	9	0.00	0.00	0.00	21332.	1.09	12.00	34	0.00	0.00	0.00	1054.
1.03	12.00	10	0.00	0.00	0.00	11457.	1.09	18.00	35	0.00	0.00	0.00	984.
1.03	18.00	11	0.00	0.00	0.00	7437.	1.10	0.00	36	0.00	0.00	0.00	918.
1.04	0.00	12	0.90	0.00	0.90	49441.	1.10	6.00	37	0.00	0.00	0.00	856.
1.04	6.00	13	0.00	0.00	0.00	4519.	1.10	12.00	38	0.00	0.00	0.00	799.
1.04	12.00	14	0.00	0.00	0.00	4217.	1.10	18.00	39	0.00	0.00	0.00	745.
1.04	18.00	15	0.00	0.00	0.00	3934.	1.11	0.00	40	0.00	0.00	0.00	696.
1.05	0.00	16	0.00	0.00	0.00	3671.	1.11	6.00	41	0.00	0.00	0.00	649.
1.05	6.00	17	1.00	0.00	0.00	3427.	1.11	12.00	42	0.00	0.00	0.00	605.
1.05	12.00	18	0.00	0.06	0.00	3140.	1.11	18.00	43	0.00	0.00	0.00	565.
1.05	18.00	19	0.10	0.00	0.00	2952.	1.12	0.00	44	0.00	0.00	0.00	527.
1.06	0.00	20	0.00	0.00	0.00	2762.	1.12	6.00	45	0.00	0.00	0.00	492.
1.06	6.00	21	0.00	0.00	0.00	2590.	1.12	12.00	46	0.00	0.00	0.00	459.
1.06	12.00	22	0.00	0.00	0.00	2422.	1.12	18.00	47	0.00	0.00	0.00	428.
1.06	18.00	23	0.00	0.00	0.00	2260.	1.13	0.00	48	0.00	0.00	0.00	399.
1.07	0.00	24	0.00	0.03	0.00	2108.	1.13	6.00	49	0.00	0.00	0.00	373.
1.07	6.00	25	0.00	0.03	0.00	1967.	1.13	12.00	50	0.00	0.00	0.00	348.

SUM 23.10 19.35 3.61 192457.
(588.)(492.)(97.)(54+9.77)

	PEAK	6-HOUR	24-HOUR	72-HOUR	TOTAL	VOLUME
CFS	49404.	39251.	26764.	12292.		192225.
C4S	1461.	1111.	753.	346.		5443.
INCHES		5.99	16.33	22.33		29.31
MM		152.04	114.57	567.16		744.57
AC-FI		19403.	33085.	72010.		95318.
INHUS CQ 4		24001.	65480.	44503.		117573.

HYDROGRAPH AT SEA 5 FOR PLATE 1, RIG 1
23. 21. 149. 201. 197. 397. 3805. 9893. 4266. 2291.

1757.	959.	951.	843.	757.	735.	565.	539.	590.	556.
519.	434.	424.	422.	343.	307.	343.	320.	290.	273.
220.	220.	211.	197.	154.	171.	160.	149.	139.	139.
155.	121.	113.	105.	96.	72.	66.	60.	75.	70.

	PEAK	0-HOUR	24-HOUR	72-HOUR	TOTAL VOLUME
CFS	9593.	7550.	5353.	2440.	38445.
CMS	200.	224.	152.	69.	1059.
INCHES		1.20	3.27	4.47	5.06
44		30.41	62.93	113.44	146.91
AC-FI		3693.	10017.	14522.	19054.
INCHES CU M		4802.	13040.	17913.	23515.

	HYDROGRAPH AT STA 5 FOR PLAN 1, RIID 2							
40.	37.	202.	456.	345.	10165.	17312.	7400.	4010.
2603.	1055.	1582.	1470.	1377.	1285.	1199.	1119.	1044.
909.	640.	791.	738.	689.	642.	599.	559.	522.
454.	424.	395.	359.	344.	321.	306.	266.	201.
227.	212.	198.	184.	172.	161.	150.	140.	130.

	PEAK	0-HOUR	24-HOUR	72-HOUR	TOTAL VOLUME
CFS	17312.	13738.	9367.	4271.	67279.
CMS	490.	389.	265.	121.	1905.
INCHES		2.09	5.71	7.62	10.26
44		53.21	145.14	190.51	260.60
AC-FI		6612.	19500.	25413.	33301.
INCHES CU M		5403.	22918.	31347.	41151.

	HYDROGRAPH AT STA 5 FOR PLAN 1, RIID 3								
57.	53.	374.	651.	492.	1493.	14519.	24732.	10600.	5728.
3710.	2422.	2200.	2100.	1967.	1835.	1713.	1590.	1491.	1391.
1250.	1211.	1130.	1054.	984.	918.	856.	799.	745.	690.
649.	605.	565.	527.	442.	459.	426.	359.	373.	348.
324.	303.	282.	264.	246.	229.	214.	200.	180.	174.

	PEAK	0-HOUR	24-HOUR	72-HOUR	TOTAL VOLUME
CFS	24732.	19025.	13382.	6101.	90112.
CMS	700.	550.	379.	173.	2742.
INCHES		2.99	8.15	11.17	13.66
44		70.02	207.34	283.59	372.28
AC-FI		9732.	26543.	36305.	47659.
INCHES CU M		12004.	32740.	44781.	56787.

	HYDROGRAPH AT STA 5 FOR PLAN 1, RIID 4								
74.	65.	450.	847.	640.	1941.	16874.	32152.	13800.	7447.
4534.	3140.	2935.	2741.	2557.	2380.	2226.	2077.	1930.	1608.
1007.	1574.	1484.	1370.	1279.	1193.	1113.	1039.	969.	904.
844.	767.	734.	685.	639.	597.	557.	519.	465.	452.
422.	394.	367.	343.	320.	290.	278.	260.	242.	226.

	PEAK	0-HOUR	24-HOUR	72-HOUR	TOTAL VOLUME
CFS	32152.	25513.	17397.	7932.	124940.
CMS	910.	722.	493.	225.	3538.
INCHES		3.69	10.01	14.51	19.05
44		98.62	209.54	306.57	463.97

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AC-FT		12001.	34530.	47190.	51957.
INUS CU 4		15005.	42502.	55210.	76422.

HURON RIVER AT SIA				5 FOR PLAN 1, RING 5					
91.	05.	390.	1042.	700.	2359.	23230.	39571.	17050.	9105.
5950.	3570.	5010.	3370.	3145.	2937.	2740.	2551.	2350.	2220.
2077.	1938.	1900.	1687.	1574.	1400.	1370.	1275.	1193.	1113.
1038.	709.	744.	843.	767.	734.	665.	639.	595.	550.
519.	464.	452.	422.	383.	367.	343.	320.	295.	276.

	PEAK	0-HOUR	24-HOUR	72-HOUR	TOTAL VOLUME
CFS	39571.	31401.	21411.	9762.	153750.
CFS	1121.	889.	605.	270.	4355.
INCHES		4.79	13.00	17.05	23.45
MM		121.63	331.74	453.75	595.65
AC-FT		15571.	42400.	556000.	70254.
INUS CU 4		19200.	52384.	71050.	94050.

HURON RIVER AT SIA				5 FOR PLAN 1, RING 0					
114.	100.	747.	1303.	900.	2967.	29030.	49404.	21332.	11457.
7437.	4844.	4519.	4217.	3934.	3071.	3425.	3190.	2982.	2762.
2596.	2422.	2200.	2108.	1907.	1635.	1713.	1590.	1491.	1391.
1298.	1211.	1130.	1054.	904.	918.	650.	799.	745.	690.
649.	605.	505.	527.	492.	459.	420.	399.	373.	348.

	PEAK	0-HOUR	24-HOUR	72-HOUR	TOTAL VOLUME
CFS	49404.	39251.	20764.	12202.	192225.
CFS	1401.	1111.	750.	346.	5443.
INCHES		5.99	16.33	22.33	29.31
MM		152.04	411.67	507.18	744.57
AC-FT		19463.	53085.	72010.	95310.
INUS CU 4		24000.	65480.	89503.	117573.

COMBINE HYDROGRAPHS

INITIAL GIFFLUW AT COURT STREET DAM

ISIHW	ICOMP	IECON	ITAPE	JPLI	JPHT	INAME	ISTAGE	IAUDI
5	2	0	0	0	0	1	0	0

SUM OF 2 HYDROGRAPHS AT				5 PLAN 1 RING 1					
367.	363.	528.	808.	1264.	2549.	9738.	20812.	32048.	53030.
71852.	63000.	66762.	87219.	79551.	67002.	55059.	42992.	32912.	15578.
20615.	17262.	14919.	13226.	11946.	10928.	10079.	9342.	8654.	8086.
7530.	7021.	6555.	6115.	5705.	5323.	4900.	4633.	4323.	4034.
3703.	3511.	3270.	3057.	2952.	2001.	2483.	2317.	2102.	2017.

	PEAK	0-HOUR	24-HOUR	72-HOUR	TOTAL VOLUME
CFS	80152.	87991.	83837.	59544.	965152.
CFS	2515.	2492.	2374.	1	27330.

McFARLAND-JOHNSON ENGINEERS, INC.

	1. INCHES	0.33	1.27	2.72	3.05
	4"	0.45	32.21	09.77	92.70
	AC-FI	43052.	106459.	920490.	470560.
INJUS CU 4		55819.	205114.	439256.	590329.

	SUM OF 2 HYDROGRAPHS AT			5 PLAN 1 RIVER 2	
078.	010.	924.	1414.	2213.	4491. 17041. 30422. 50644. 93026.
12093.	149431.	159407.	155544.	140104.	117300. 93709. 72579. 55442. 43149.
35069.	29010.	25702.	22952.	20801.	19059. 17609. 10333. 15159. 14147.
13100.	12247.	11470.	10701.	9983.	9314. 8690. 8108. 750. 7059.
0500.	015.	5733.	5349.	4991.	4557. 4345. 4054. 3783. 3529.

	PEAK	6-HOUR	24-HOUR	72-HOUR	TOTAL VOLUME
	CFS	159407.	157620.	149559.	104935. 1639010.
	CFS	4514.	4463.	4235.	2973. 47020.
	INCHES		0.66	2.20	4.76 0.39
	4"		15.14	57.46	121.00 102.23
	AC-FI		70161.	290043.	524700. 837529.
INJUS CU 4			90411.	505904.	770554. 1033070.

	SUM OF 2 HYDROGRAPHS AT			5 PLAN 1 RIVER 3	
909.	956.	1329.	2019.	3161.	6373. 24345. 52031. 80193. 133409.
103243.	210541.	231110.	224043.	205509.	180479. 131619. 101330. 77180. 60139.
49119.	41059.	35429.	32577.	29559.	27179. 25123. 23316. 21091. 20205.
10850.	17550.	10360.	15260.	14262.	13580. 12415. 11563. 10508. 10094.
9409.	8713.	8191.	7042.	7136.	6553. 6207. 5792. 5404. 5042.

	PEAK	6-HOUR	24-HOUR	72-HOUR	TOTAL VOLUME
	CFS	231110.	227975.	216126.	150242. 2412680.
	CFS	6544.	6456.	6120.	4255. 66325.
	INCHES		0.66	3.27	0.41 9.12
	44		21.90	63.03	173.17 231.75
	AC-FI		113047.	420079.	894030. 1190409.
INJUS CU 4			139441.	526700.	1102776. 1475823.

	SUM OF 4 HYDROGRAPHS AT			5 PLAN 1 RIVER 4	
1259.	1245.	1715.	2025.	4109.	6285. 31648. 67640. 104385. 176281.
240104.	204520.	303207.	294099.	261135.	215533. 169600. 129668. 98428. 70609.
02610.	53490.	36949.	42112.	38340.	35200. 32022. 30291. 28166. 26262.
24464.	22834.	21301.	19672.	16540.	17298. 16139. 15058. 14050. 13109.
12231.	11412.	10040.	9935.	9269.	8549. 8070. 7529. 7025. 6554.

	PEAK	6-HOUR	24-HOUR	72-HOUR	TOTAL VOLUME
	CFS	303207.	296683.	283135.	195005. 3136743.
	CFS	6563.	6458.	8017.	5539. 88823.
	INCHES		1.13	4.28	0.88 11.80
	44		28.09	102.75	225.45 301.28
	AC-FI		148107.	561591.	1103929. 1555410.
INJUS CU 4			192000.	692712.	1435005. 1918559.



SET OF 2 MICROGRAPHS AT 5 PLAN 1 Elevation 5

1550.	1532.	2111.	3231.	5053.	15197.	35551.	3250.	125034.	215355.
27/572.	353903.	2932.	30330.	321370.	203327.	207339.	157944.	119513.	93010.
70250.	35155.	57351.	51572.	47047.	43315.	40100.	37259.	34031.	32310.
10131.	25192.	20210.	24457.	22614.	21290.	19664.	16533.	17242.	10134.
15054.	14040.	13110.	12227.	11409.	10645.	9932.	9267.	8840.	6067.

	PEAK	0-MIN	24-MIN	72-MIN	INITIAL VOLUME
CFS	373032.	369564.	350410.	241627.	3560000.
CFS	19042.	10405.	5923.	5820.	109320.
InCnS		1.40	5.30	10.94	14.00
H+		35.50	134.03	277.60	370.61
AC-FI		183205.	695029.	1454212.	1914351.
InJUS CO X		225054.	557305.	1703075.	2301317.

SET OF 2 MICROGRAPHS AT 5 PLAN 1 Elevation 6

1937.	1915.	2039.	4039.	0322.	12740.	43069.	104002.	1e0991.	270284.
374013.	444570.	472907.	455045.	401721.	329475.	257300.	195003.	147543.	114505.
93050.	60300.	71904.	64011.	58539.	53990.	50047.	46525.	43327.	40343.
37051.	35125.	32700.	30571.	29523.	20012.	24530.	23107.	21015.	20155.
15057.	15357.	15351.	15254.	14261.	13300.	12410.	11583.	10808.	10054.

	PEAK	0-MIN	24-MIN	72-MIN	INITIAL VOLUME
CFS	472907.	40400.	44042.	301716.	4625750.
CFS	13393.	13151.	12473.	6544.	130000.
InCnS		1.70	6.00	13.00	16.25
H+		44.51	109.22	347.75	403.51
AC-FI		230254.	573044.	1795349.	2392939.
InJUS CO X		284051.	1077624.	2214030.	2951600.

***** ***** ***** ***** *****



PEAK FLOW AND STORAGE (END OF PERIOD) SUMMARY FOR MULTIPLE PLAN-RATIO ECONOMIC COMPUTATIONS
 FLOWS IN CUBIC FEET PER SECOND (CUBIC METERS PER SECOND)
 AREA IN SQUARE MILES (SQUARE KILOMETERS)

OPERATION	STATION	AREA	PLAN	RADIUS APPLIED TO FLOWS					
				RATIO 1 0.20	RATIO 2 0.35	RATIO 3 0.50	RATIO 4 0.65	RATIO 5 0.80	RATIO 6 1.00
HYDROGRAPH AT	1 1075.00 (2704.24)		1 59602. 104654. 149506. 194356. 239210. 299012. (1693.42)(2963.48)(4233.54)(5503.60)(6773.66)(8467.08)(
ROUTED TO	2 1075.00 (2784.24)		1 52056. 100716. 147331. 193880. 242009. 302780. (1474.06)(2652.01)(4171.95)(5490.08)(6852.92)(8573.78)(
HYDROGRAPH AT	2 335.00 (861.65)		1 25575. 44756. 63937. 83118. 102300. 127875. (724.20)(1267.35)(1810.50)(2353.65)(2896.80)(3621.00)(
2 COMBINED	2 1410.00 (3651.88)		1 70940. 133770. 194557. 255274. 317570. 397232. (2008.90)(3788.10)(5509.23)(7228.54)(8992.57)(11246.34)(
ROUTED TO	3 1410.00 (3651.88)		1 50826. 103721. 150826. 198101. 245372. 308510. (1009.14)(2937.04)(4270.91)(5609.59)(6948.10)(8730.02)(
HYDROGRAPH AT	3 256.00 (603.04)		1 10370. 28659. 40941. 53223. 65505. 81882. (463.73)(811.52)(1159.32)(1507.11)(1854.91)(2318.63)(
2 COMBINED	3 1666.00 (4314.92)		1 61701. 112252. 163014. 213945. 264872. 332885. (1747.18)(3178.62)(4610.03)(6058.24)(7500.34)(9426.26)(
ROUTED TO	4 1666.00 (4314.92)		1 61701. 112252. 163014. 213945. 264872. 332885. (1747.18)(3178.62)(4610.03)(6058.24)(7500.34)(9426.26)(
HYDROGRAPH AT	4 260.00 (673.40)		1 19925. 34868. 49812. 64756. 79699. 99624. (564.21)(987.36)(1410.52)(1633.67)(2256.83)(2821.03)(
HYDROGRAPH AT	4 215.00 (556.85)		1 13810. 24179. 34541. 44904. 55206. 69082. (391.24)(684.67)(978.10)(1271.53)(1564.96)(1950.19)(
HYDROGRAPH AT	4 71.00 (183.89)		1 8597. 15044. 21492. 27940. 34387. 42984. (243.43)(426.01)(608.59)(791.16)(973.74)(1217.17)(
HYDROGRAPH AT	4 187.00 (464.33)		1 10350. 18122. 25889. 33656. 41422. 51778. (293.24)(513.16)(733.09)(953.02)(1172.95)(1466.18)(
5 COMBINED	4 2399.00 (6213.38)		1 92553. 167181. 243187. 319640. 398668. 499775. (2620.82)(4734.04)(6686.29)(9051.19)(11232.37)(14152.06)(
ROUTED TO	5 2399.00 (6213.38)		1 87658. 157826. 228851. 300329. 372216. 468448. (2481.67)(4469.12)(6480.32)(8504.36)(10539.98)(13204.96)(
HYDROGRAPH AT	5 61.00 (157.99)		1 9893. 17312. 24732. 32152. 39571. 49464. (280.13)(490.23)(700.33)(910.43)(1120.53)(1400.66)(
2 COMBINED	5 2400.00 (6371.37)		1 88702. 159407. 231110. 303267. 375832. 472967. (2513.46)(4513.91)(6544.31)(8587.55)(10642.36)(13392.93)(

McFARLAND-JOHNSON ENGINEERS, INC.

FLJ00 HYDROGRAPH PACKAGE (HEC-1)
DAM SAFETY VERSION JULY 1978
LAST MODIFICATION 20 FEB 79



51 K1 ROUTE FLOWS TO CONFLUENCE OF BLACK CREEK BY LAGGING FLOWS
 52 Y 0 0 0 1
 53 Y1 0 1 0 0 0 0
 54 K 0 4 0 0 0 0 1 0 0 0 0
 55 K1 HORNPIPE CREEK INFLOW HYDROGRAPH
 56 M 1 -1 260 0 2400 0 0 0 1 0 0
 57 P 0 22 41 55 63 74 0 0 1 .1 0 0
 58 T 0 0 0 0 0 0 1 0 0 0 0
 59 U 12
 60 U1 100 500 3000 0300 5000 3000 2400 1700 1500 1000
 61 U1 700 400
 62 X -1 -.1 2
 63 K 0 4 0 0 0 0 0 1 0 0 0
 64 K1 UNKRA CREEK INFLOW HYDROGRAPH
 65 M 1 -1 215 0 2400 0 0 0 1 0 0
 66 P 0 22 41 55 63 74 0 0 1 .1 0 0
 67 T 0 0 0 0 0 0 1 0 0 0 0
 68 U 12
 69 U1 100 400 1200 2800 4200 4200 3000 2100 1500 1100
 70 U1 800 500
 71 X -1 -.1 2
 72 K 0 4 0 0 0 0 0 1 0 0 0
 73 K1 LOCAL INFLOW HYDROGRAPH
 74 M 1 -1 71 0 2450 0 0 0 1 0 0
 75 P 0 22 41 55 63 74 0 0 1 .1 0 0
 76 T 0 0 0 0 0 0 1 0 0 0 0
 77 U 8
 78 U1 400 2400 2300 1200 700 400 200 100
 79 X -1.5 -.1 2
 80 K 0 4 0 0 0 0 0 1 0 0 0
 81 K1 BLACK CREEK INFLOW HYDROGRAPH
 82 M 1 -1 10 0 2460 0 0 0 1 0 0
 83 P 0 22 41 55 63 74 0 0 1 .1 0 0
 84 T 0 0 0 0 0 0 1 0 0 0 0
 85 U 12
 86 U1 100 400 900 1300 1700 2300 2800 3100 2600 2000
 87 U1 1400 900
 88 X -1 -.1 2
 89 K 5 4 0 0 0 0 0 1 0 0 0
 90 K1 COMBINE FLOWS AT CONFLUENCE OF BLACK CREEK
 91 K 1 5 0 0 0 0 0 1 0 0 0
 92 K1 ROUTE COMBINE FLOWS TO COURT STREET DAM OUTLET USING MUSKINGUM METHOD
 93 Y 0 0 0 0 1
 94 Y1 1 0 0 6.93 .01
 95 K 0 5 0 0 0 0 0 1 0 0 0
 96 K1 LOCAL INFLOW HYDROGRAPH AT OUTLET OF COURT STREET DAM
 97 M 1 -1 .01 0 2400 0 0 0 1 0 0
 98 P 0 22 41 55 63 74 0 0 1 .1 0 0
 99 T 0 0 0 0 0 0 1 0 0 0 0
 100 U 8



101	01	1500	2800	1100	600	400	200	100	100	
102	X	-2	-1	4						
103	K	2	3	0	0	0	6	1	0	0
104	K1	TOTAL JUFEUDA AT COURF STREET DAM								
105	K	99								



PREVIEW OF SEQUENCE OF STREAM NETWORK CALCULATIONS

RUNOFF HYDROGRAPH AI	1
ROULE HYDROGRAPH TO	2
RUNOFF HYDROGRAPH AI	2
COMBINE 2 HYDROGRAPHS AT	2
ROULE HYDROGRAPH TO	3
RUNOFF HYDROGRAPH AT	3
COMBINE 2 HYDROGRAPHS AT	3
ROULE HYDROGRAPH TO	4
RUNOFF HYDROGRAPH AT	4
RUNOFF HYDROGRAPH AI	4
RUNOFF HYDROGRAPH AT	4
RUNOFF HYDROGRAPH AT	4
COMBINE 5 HYDROGRAPHS AT	4
ROULE HYDROGRAPH TO	5
RUNOFF HYDROGRAPH AI	5
COMBINE 2 HYDROGRAPHS AT	5
END OF NETWORK	



FLUWOOD 400RJGRAPH PACKAGE (hcC-1)
DAM SAFETY VERSION JULY 1978
LAST MODIFICATION 26 FEB 79

TIME OF EXECUTION 20-AUG-80 11:44:11

HYDROLOGIC-HYDRAULIC ANALYSIS OF SAFETY OF COUNTRY STREET DAM
RADIAL OF PMF RIVER THROUGH THE KESTERDAK

MULTI-PLAN ANALYSES TO BE PERFORMED
NPLAN= 1 NRTIUE= b LRTIUE= 1
KLTIUE= 0.20 U.35 0.20 0.65 0.00 1.00

卷之三

1.01	18.00	3	1.40	0.03	0.03	3947.	1.00	0.00	26	0.00	0.00	0.00	11025.
1.02	0.00	4	0.17	0.00	0.17	9221.	1.00	0.00	29	0.00	0.00	0.00	10207.
1.02	6.00	5	0.03	0.05	0.00	15439.	1.00	12.00	30	0.00	0.00	0.00	9598.
1.02	12.00	6	2.00	2.20	0.00	25026.	1.00	16.00	31	0.00	0.00	0.00	8955.
1.02	18.00	7	0.34	7.74	0.00	60542.	1.00	0.00	32	0.00	0.00	0.00	8350.
1.03	0.00	8	0.98	0.38	0.00	164409.	1.00	0.00	33	0.00	0.00	0.00	7798.
1.03	6.00	9	0.00	0.00	0.00	243986.	1.00	12.00	34	0.00	0.00	0.00	7274.
1.03	12.00	10	0.00	0.00	0.00	243250.	1.00	18.00	35	0.00	0.00	0.00	6787.
1.03	18.00	11	0.00	0.00	0.00	162747.	1.00	0.00	36	0.00	0.00	0.00	6332.
1.04	0.00	12	0.00	0.00	0.00	86380.	1.00	6.00	37	0.00	0.00	0.00	5908.
1.04	6.00	13	0.00	0.00	0.00	58096.	1.00	12.00	38	0.00	0.00	0.00	5513.
1.04	12.00	14	0.00	0.00	0.00	44579.	1.00	18.00	39	0.00	0.00	0.00	5143.
1.04	18.00	15	0.00	0.00	0.00	35305.	1.00	0.00	40	0.00	0.00	0.00	4799.
1.05	0.00	16	0.00	0.00	0.00	27901.	1.00	6.00	41	0.00	0.00	0.00	4478.
1.05	6.00	17	0.00	0.00	0.00	23033.	1.00	12.00	42	0.00	0.00	0.00	4178.
1.05	12.00	18	0.00	0.00	0.00	22051.	1.00	18.00	43	0.00	0.00	0.00	3898.
1.05	18.00	19	0.00	0.00	0.00	20574.	1.00	0.00	44	0.00	0.00	0.00	3537.
1.06	0.00	20	0.00	0.00	0.00	19190.	1.00	6.00	45	0.00	0.00	0.00	3393.
1.06	6.00	21	0.00	0.00	0.00	17911.	1.00	12.00	46	0.00	0.00	0.00	3166.
1.06	12.00	22	0.00	0.00	0.00	16111.	1.00	18.00	47	0.00	0.00	0.00	2954.
1.06	18.00	23	0.00	0.00	0.00	15592.	1.00	0.00	48	0.00	0.00	0.00	2756.
1.07	0.00	24	0.00	0.00	0.00	14548.	1.00	6.00	49	0.00	0.00	0.00	2572.
1.07	6.00	25	0.00	0.00	0.00	13574.	1.00	12.00	50	0.00	0.00	0.00	2400.

SUM 15.05 11.04 4.01 1525298.
(382.)(260.)(102.)(43191.62)

	PEAK	6-HOUR	24-HOUR	72-HOUR	TOTAL VOLUME
CFS	243900.	243015.	193643.	99560.	1523596.
CMS	6909.	6898.	5489.	2822.	43143.
LCMS		2.11	6.71	10.35	13.18
RA		53.55	170.42	264.86	334.68
AC-FT		120001.	384482.	593010.	755502.
THOUS CU M		149005.	474251.	731477.	931898.

	HYDROGRAPH AT STA 1 FOR PLAN 1, R110 1			
201.	187.	789.	1644.	3000.
32549.	17276.	11019.	8916.	7061.
3582.	3312.	3118.	2910.	2715.
1791.	1671.	1559.	1455.	1357.
896.	830.	780.	727.	679.

	PEAK	6-HOUR	24-HOUR	72-HOUR	TOTAL VOLUME
CFS	48796.	48723.	38769.	19932.	304719.
CMS	1382.	1380.	1098.	564.	8629.
LCMS		0.42	1.34	2.07	2.64
RA		10.71	34.08	52.57	60.98
AC-FT		24160.	70896.	118604.	151100.
THOUS CU M		29601.	94850.	146295.	186380.

	HYDROGRAPH AT STA 1 FOR PLAN 1, R110 2			
351.	326.	1382.	3227.	5404.
50902.	50233.	20334.	15603.	12357.
5209.	5649.	5457.	5092.	4751.
3134.	2924.	2729.	2540.	2375.
1567.	1402.	1304.	1273.	1166.

McFARLAND-JOHNSON ENGINEERS, INC.

	PEAK	6-HOUR	24-HOUR	72-HOUR	TOTAL VOLUME
CFS	85393.	65205.	67045.	34861.	533259.
CMS	2418.	2414.	1921.	900.	15100.
INCHES		0.74	2.35	3.02	4.61
MM		18.74	59.05	92.00	117.21
AC-FT		42260.	134509.	207550.	264426.
INCHES CU M		52152.	165988.	256017.	320154.

	HYDROGRAPH AT STA			1 FOR PLAN 1, RI10 3					
502.	408.	1974.	4011.	7719.	14013.	40271.	82204.	121990.	121625.
81374.	43190.	29048.	22290.	17652.	13980.	11817.	11025.	10267.	9598.
8955.	6350.	7796.	7274.	5787.	6332.	5904.	5513.	5143.	4799.
3478.	4178.	5698.	3637.	3993.	3106.	2954.	2750.	2572.	2400.
2239.	2089.	1949.	1610.	1697.	1583.	1477.	1370.	1280.	1200.

	PEAK	6-HOUR	24-HOUR	72-HOUR	TOTAL VOLUME
CFS	121990.	121807.	96921.	49830.	761798.
CMS	3454.	3449.	2745.	1411.	21572.
INCHES		1.05	3.35	5.17	6.59
MM		26.77	85.21	131.43	167.44
AC-FT		60400.	192241.	296509.	377751.
INCHES CU M		74503.	237125.	365736.	465949.

	HYDROGRAPH AT STA			1 FOR PLAN 1, RI10 4					
652.	608.	2566.	5994.	10035.	16217.	52352.	106806.	158587.	158112.
105766.	56147.	37103.	28977.	22948.	15174.	15362.	14333.	13373.	12477.
11042.	10862.	10135.	9456.	8823.	6232.	7681.	7106.	6697.	6239.
5621.	5431.	5007.	4728.	4411.	4110.	3840.	3583.	3343.	3119.
2910.	2716.	2534.	2364.	2206.	2050.	1920.	1792.	1672.	1560.

	PEAK	6-HOUR	24-HOUR	72-HOUR	TOTAL VOLUME
CFS	158567.	158350.	125990.	64779.	990337.
CMS	4491.	4484.	3568.	1934.	28043.
INCHES		1.37	4.36	6.73	6.57
MM		34.80	110.77	170.86	217.67
AC-FT		78520.	249913.	385462.	491076.
INCHES CU M		96654.	308263.	475400.	605734.

	HYDROGRAPH AT STA			1 FOR PLAN 1, RI10 5					
802.	749.	3158.	7377.	12351.	22421.	64433.	131527.	195184.	194600.
130198.	69104.	46477.	35663.	28244.	22368.	16907.	17640.	16459.	15357.
14329.	13309.	12474.	11636.	10859.	11132.	9453.	8620.	8230.	7678.
7104.	6664.	6237.	5619.	5429.	5066.	4727.	4410.	4115.	3839.
3582.	3342.	3116.	2910.	2715.	2533.	2363.	2205.	2057.	1920.

	PEAK	6-HOUR	24-HOUR	72-HOUR	TOTAL VOLUME
CFS	195184.	194892.	155074.	79728.	1216877.
CMS	5527.	5519.	4391.	2256.	34515.
INCHES		1.69	5.37	8.28	10.55
MM		42.64	136.34	210.29	267.90
AC-FT		96641.	307565.	474414.	604402.
INCHES CU M		119204.	379401.	585161.	745518.

HYDROGRAPH AT STA				1 FT PLN. 1, RTD 0					
1003.	730.	3941.	9221.	15434.	26020.	00542.	10440.	243900.	243250.
102747.	00300.	55000.	44579.	55305.	27951.	23033.	22051.	20574.	19190.
17911.	10711.	15592.	14540.	13574.	12005.	11017.	11025.	10267.	9598.
0955.	0350.	7790.	7271.	6767.	0352.	5908.	5513.	5143.	4799.
4476.	4170.	3690.	3637.	3393.	3100.	2954.	2750.	2572.	2400.

	PEAK	0-HOUR	24-HOUR	48-HOUR	TOTAL VOLUME
CFS	243900.	243015.	193843.	99000.	1523590.
CMS	0909.	6890.	5489.	2522.	43143.
INCHES		2.11	0.71	10.35	13.10
MM		53.55	17.042	262.86	334.66
AC-FT		120301.	364482.	593018.	755502.
INCHES Cu M		139005.	474251.	731477.	931890.

HYDROGRAPH ROUTING

ROUTING OF INFLOW HYDROGRAPH USING MODIFIED PULS METHOD

	ISIAJ	ICOMP	IECON	ITAPE	JPLT	JPRI	INAME	ISIAJ	IAUTC	
	2	1	0	0	0	0	1	0	0	
	ROUTING DATA									
ROUTS	ROUTS	Avg	IRES	ISIAJ	1021	IPMP		LSIR		
0.0	0.000	0.00	1	1	0	0		0		
	ROUTS	ROUTS	LAG	A4SKN	X	TSK	STORA	ISPKAI		
	1	0	0	0.000	0.000	0.000	4660.	0		
STORAGE	46600.00	22500.00	50000.00	120000.00	337400.00	364300.00	377700.00	391100.00	405000.00	41
	431300.00	436000.00	444700.00	451400.00						
OUTFLOWS	0.00	0.00	0.00	0.00	0.00	41500.00	78500.00	126900.00	162000.00	2
	316000.00	359000.00	402000.00	417000.00						

STATION 2, PLAN 1, RTD 1

OUTFLW

0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
0.	0.	0.	0.	0.	0.	0.	0.	0.	0.

STOR

4759.	4850.	5098.	5751.	6974.	9129.	14512.	26659.	46909.	71069.
91202.	103555.	110719.	115810.	119772.	122909.	125467.	127732.	129646.	131818.
133058.	135375.	136977.	136471.	139660.	141167.	142361.	143513.	144570.	145556.
146476.	147335.	149136.	148883.	149560.	150231.	150838.	151404.	151932.	152425.
152885.	153315.	153715.	154069.	154437.	154763.	155000.	155349.	155613.	155860.

STAGE

0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

McFARLAND-JOHNSON ENGINEERS, INC.

0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
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	PEAK	0-HOUR	24-HOUR	72-HOUR	TOTAL VOLUME
CFS	0.	0.	0.	0.	0.
CFS	0.	0.	0.	0.	0.
INCHES		0.00	0.00	0.00	0.00
INCHES		0.00	0.00	0.00	0.00
AC-FT		0.	0.	0.	0.
INCHES Cu M		0.	0.	0.	0.

MAXIMUM STORAGE = 155550.

STATION 2, PLAN 1, RIID 2

OUTFLOA									
0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
0.	0.	0.	0.	0.	0.	0.	0.	0.	0.

STOR									
4834.	5502.	5420.	6509.	6709.	12480.	21902.	43158.	78595.	120877.
150108.	177720.	190203.	199173.	200105.	211595.	215072.	220037.	223730.	227187.
230407.	233411.	230214.	230630.	241270.	243547.	245671.	247653.	249503.	251228.
252836.	253441.	255742.	257050.	258270.	259409.	260471.	261452.	262367.	263249.
264054.	264505.	265505.	266100.	266770.	267339.	267670.	268350.	268828.	269260.

STOR									
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

	PEAK	0-HOUR	24-HOUR	72-HOUR	TOTAL VOLUME
CFS	0.	0.	0.	0.	0.
CFS	0.	0.	0.	0.	0.
INCHES		0.00	0.00	0.00	0.00
INCHES		0.00	0.00	0.00	0.00
AC-FT		0.	0.	0.	0.
INCHES Cu 4		0.	0.	0.	0.

MAXIMUM STORAGE = 269260.

STATION 2, PLAN 1, RIID 3

OUTFLOA									
0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
4902.	4584.	4252.	3995.	4781.	5755.	5962.	5823.	5549.	5229.
2462.	2297.	2143.	2000.	1866.	1731.	1624.	1515.	1414.	1319.

STOR
McFARLAND-JOHNSON ENGINEERS, INC.

4909.	5149.	5154.	7367.	10444.	10032.	29291.	59057.	110253.	170684.
221014.	251391.	269903.	262930.	292399.	300262.	390570.	312311.	317625.	322555.
327155.	331447.	335452.	330093.	340449.	341137.	341264.	341174.	340997.	340790.
340578.	340372.	340100.	339991.	339318.	339050.	339505.	339355.	339233.	339110.
339990.	339037.	338799.	330090.	336699.	336528.	336453.	336352.	336317.	338255.

STAGE									
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

	PEAK	6-HOUR	24-HOUR	72-HOUR	TOTAL VOLUME
CFS	5902.	5892.	5708.	4779.	59549.
CMS	109.	107.	102.	135.	2530.
INCHES		0.03	0.29	0.50	0.77
MM		1.30	5.02	12.00	19.68
AC-FI		2922.	11321.	28335.	44404.
INCHES CU M		3004.	13904.	35074.	54772.

MAXIMUM STORAGE = 341264.

STATION 2, PEARL R, MILITARY

JULYFLUX									
0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
0.	0.	13337.	24422.	25274.	22000.	19403.	16862.	15206.	13944.
12901.	11909.	11154.	10407.	9700.	9054.	6447.	7661.	7353.	6860.
6401.	5972.	5572.	5199.	4651.	4520.	4225.	3940.	3676.	3430.
3200.	2900.	2700.	2599.	2425.	2203.	2111.	1970.	1836.	1715.

STUR									
4963.	5290.	6083.	8205.	12179.	19164.	36080.	76150.	141970.	220491.
265920.	320009.	340040.	353230.	353783.	352092.	343977.	348343.	347250.	346438.
345703.	345171.	344537.	344140.	343911.	343259.	342675.	342508.	342100.	341647.
341549.	341271.	341012.	340770.	340544.	340334.	340137.	339954.	339783.	339623.
339474.	339330.	339200.	339085.	338972.	338691.	338677.	338677.	338591.	338512.

STAGE									
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

	PEAK	6-HOUR	24-HOUR	72-HOUR	TOTAL VOLUME
CFS	25274.	24348.	22183.	16315.	317722.
CMS	710.	704.	628.	462.	6997.
INCHES		0.22	0.77	1.09	2.75
MM		5.46	19.50	43.03	69.63
AC-FI		12321.	44000.	97081.	157548.
INCHES CU M		15198.	54273.	119747.	194332.

MAXIMUM STORAGE = 353783.

McFARLAND-JOHNSON ENGINEERS, INC.

STATION 2, PLAN 1, RIVER S

OUTFLOWS

0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
14903.	71300.	00332.	44077.	30622.	30551.	24250.	21209.	10537.	17200.		
15922.	14770.	13765.	14014.	11947.	11224.	16350.	9699.	9819.	643.		
1675.	73500.	00520.	0599.	0476.	0510.	5197.	4049.	4222.	4222.		
3999.	3275.	3247.	3199.	2999.	2955.	2999.	2425.	2425.	7111.		

STOR

5058.	3442.	0411.	9023.	13914.	22355.	44069.	32055.	173057.	270258.		
347112.	370110.	371124.	305450.	361138.	357050.	353592.	351167.	349073.	348585.		
347121.	340977.	340512.	345702.	345144.	344523.	344139.	343687.	343200.	342673.		
342506.	342104.	341540.	341540.	341270.	341011.	340765.	340543.	340333.	340136.		
339993.	339702.	339023.	339474.	339335.	339205.	339084.	338972.	338556.	338765.		

STAGE

0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

	PEAK	6-HOUR	24-HOUR	72-HOUR	TOTAL VOLUME
CF5	71300.	55349.	50544.	30905.	545694.
CAS	2021.	1665.	1431.	875.	15456.
1vCHES		0.57	1.75	3.21	4.74
AA		14.47	44.44	31.51	119.95
AC-FI		32653.	100253.	1e3900.	270691.
1vJUS CO A		40275.	123601.	220037.	333693.

MAXIMUM STORAGE = 375110.

STATION 2, PLAN 1, RIVER S

OUTFLOWS

0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
156290.	124672.	75997.	55955.	42940.	30223.	30454.	26242.	23514.	21506.		
19872.	15455.	17150.	16613.	14933.	13929.	12995.	12124.	11312.	10554.		
9647.	9100.	8572.	7990.	7403.	6953.	6497.	6062.	5656.	5277.		
4924.	4394.	4200.	3999.	3731.	3732.	3248.	3031.	2828.	2638.		

STOR

5157.	5053.	5843.	10114.	15226.	27004.	53922.	114053.	215907.	336707.		
390018.	390725.	370795.	309535.	304522.	300869.	357140.	354410.	352642.	351340.		
350281.	349362.	349550.	347779.	347079.	346429.	345823.	345259.	344732.	344241.		
343763.	343355.	342957.	342505.	342237.	341913.	341011.	341329.	341056.	340821.		
340591.	340378.	340175.	339992.	339619.	339657.	339500.	339305.	339233.	339110.		

STAGE

0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

PEAK 6-HOUR 24-HOUR 72-HOUR TOTAL VOLUME
McFARLAND-JOHNSON ENGINEERS, INC.

CF5	150290.	140461.	96254.	51908.	850124.
CM5	4420.	3976.	2725.	1470.	24073.
INCHE5		1.22	3.33	5.39	7.30
MM		30.88	84.01	136.91	186.85
AC-F1		83680.	19077.	421549.	514974.
MM		85924.	235444.	380872.	380872.
MMU5	CL				

MANAGERS ASSESS = 14612

卷之三

CANASERASIA CHICKEN LATRON HYDROSCABAH AT LAGUNA DELICIA

HYDROGRAPH DATA
1 1 HNG 1 ARKA 1 SWAP 1 RSDA 1 TRSPC 1 RATIO 1 ISNU 1 ISAME 1 LOCAL

SPL	PM5	PRECIP DATA					
		R10	R12	R24	R48	R72	R96
0.00	2.2	1.1	1.1	1.1	1.1	1.1	1.1
0.10	2.2	1.1	1.1	1.1	1.1	1.1	1.1
0.20	2.2	1.1	1.1	1.1	1.1	1.1	1.1
0.30	2.2	1.1	1.1	1.1	1.1	1.1	1.1
0.40	2.2	1.1	1.1	1.1	1.1	1.1	1.1
0.50	2.2	1.1	1.1	1.1	1.1	1.1	1.1
0.60	2.2	1.1	1.1	1.1	1.1	1.1	1.1
0.70	2.2	1.1	1.1	1.1	1.1	1.1	1.1
0.80	2.2	1.1	1.1	1.1	1.1	1.1	1.1
0.90	2.2	1.1	1.1	1.1	1.1	1.1	1.1
1.00	2.2	1.1	1.1	1.1	1.1	1.1	1.1

IRSPC COMPUTED BY THE PROGRAM IS 0.923

UNIT GRAPH SCALES 36000. CFS JK 1.00 INCHES OVER THE AREA

HR.MN	MO.DA	PERIOD	RAIN	EXCS	LOSS	END-OF-PERIOD FLG	CUHP Q	HR.MN	PERIOD	RAIN	EXCS	LOSS	COMP Q
1.01	6.00	1	0.11	0.00	0.11	313.	1.07	12.00	20	0.00	0.00	0.00	3B11.
1.01	12.00	2	0.20	0.00	0.20	292.	1.07	18.00	27	0.00	0.00	0.00	3B56.
1.01	18.00	3	1.46	0.63	0.83	1840.	1.06	0.00	28	0.00	0.00	0.00	3314.
1.02	0.00	4	0.17	0.00	0.17	5147.	1.08	6.00	29	0.00	0.00	0.00	3096.
1.02	6.00	5	0.05	0.05	0.00	5508.	1.08	12.00	30	0.00	0.00	0.00	2988.
1.02	12.00	6	2.55	2.25	0.60	10001.	1.06	16.00	31	0.00	0.00	0.00	2695.
1.02	18.00	7	6.34	7.74	0.00	40015.	1.09	0.00	32	0.00	0.00	0.00	2514.
1.03	0.00	8	0.98	0.38	0.60	61997.	1.09	6.00	33	0.00	0.00	0.00	2346.
1.03	6.00	9	0.00	0.00	0.00	81463.	1.09	12.00	34	0.00	0.00	0.00	2189.
1.03	12.00	10	0.00	0.00	0.00	59651.	1.09	16.00	35	0.00	0.00	0.00	2042.
1.03	18.00	11	0.00	0.00	0.00	40266.	1.10	0.00	36	0.00	0.00	0.00	1906.
1.04	0.00	12	0.00	0.00	0.00	27973.	1.10	6.00	37	0.00	0.00	0.00	1778.
1.04	6.00	13	0.00	0.00	0.00	18934.	1.10	12.00	38	0.00	0.00	0.00	1659.
1.04	12.00	14	0.00	0.00	0.00	12727.	1.10	18.00	39	0.00	0.00	0.00	1549.

1.04	10.00	15	0.00	0.00	0.00	8169.	1.11	0.00	40	0.00	0.00	0.00	1444.
1.05	0.00	16	0.00	0.00	0.00	7022.	1.11	6.00	41	0.00	0.00	0.00	1347.
1.05	0.00	17	0.00	0.00	0.00	7112.	1.11	12.00	42	0.00	0.00	0.00	1257.
1.05	12.00	18	0.00	0.00	0.00	6035.	1.11	18.00	43	0.00	0.00	0.00	1173.
1.05	18.00	19	0.00	0.00	0.00	6191.	1.12	0.00	44	0.00	0.00	0.00	1094.
1.06	0.00	20	0.00	0.00	0.00	5776.	1.12	6.00	45	0.00	0.00	0.00	1021.
1.06	0.00	21	0.00	0.00	0.00	5390.	1.12	12.00	46	0.00	0.00	0.00	953.
1.06	12.00	22	0.00	0.00	0.00	5029.	1.12	18.00	47	0.00	0.00	0.00	889.
1.06	18.00	23	0.00	0.00	0.00	4692.	1.13	0.00	48	0.00	0.00	0.00	829.
1.07	0.00	24	0.00	0.00	0.00	4378.	1.13	6.00	49	0.00	0.00	0.00	774.
1.07	0.00	25	0.00	0.00	0.00	4085.	1.13	12.00	50	0.00	0.00	0.00	722.

SUM 15.05 11.04 4.01 498095.
(382.)(280.)(102.)(14104.46)

	PEAK	6-HOUR	24-HOUR	72-HOUR	TOTAL VOLUME
CFS	81997.	81730.	65810.	32931.	497577.
CMS	2322.	2314.	1864.	932.	14090.
INCHES		2.27	7.31	10.97	13.82
MM		57.64	185.67	278.72	350.95
AC-FT		40527.	130532.	195951.	246732.
THOUS CU M		49989.	161009.	241702.	304340.

	HYDROGRAPH AT STA 2 FOR PLAN 1, RIIO 1			
63.	58.	308.	1029.	1102.
8053.	5595.	3197.	2545.	1634.
1078.	1006.	936.	876.	817.
539.	503.	469.	438.	408.
269.	251.	235.	219.	204.
				2000.
				6003.
				16399.
				16293.
				11928.

	PEAK	6-HOUR	24-HOUR	72-HOUR	TOTAL VOLUME
CFS	10399.	16340.	13162.	6556.	99515.
CMS	404.	463.	373.	186.	2818.
INCHES		0.45	1.40	2.19	2.76
MM		11.53	37.13	55.74	70.19
AC-FT		8105.	26106.	39190.	49346.
THOUS CU M		9998.	32202.	48340.	60868.

	HYDROGRAPH AT STA 2 FOR PLAN 1, RIIO 2			
109.	102.	644.	1802.	1928.
14093.	9791.	6644.	4455.	2859.
1860.	1760.	1642.	1532.	1430.
943.	880.	821.	766.	715.
472.	440.	411.	363.	357.
				3501.
				14005.
				26699.
				28512.
				20874.

	PEAK	6-HOUR	24-HOUR	72-HOUR	TOTAL VOLUME
CFS	28699.	28605.	23034.	11526.	174152.
CMS	813.	810.	652.	326.	4931.
INCHES		0.79	2.56	3.84	4.84
MM		20.18	64.98	97.55	122.83
AC-FT		13184.	45686.	68863.	86356.
THOUS CU M		17496.	56353.	84596.	106519.

	HYDROGRAPH AT STA 2 FOR PLAN 1, RIIO 3			
150.	146.	920.	2574.	2754.
				5001.
				5007.
				40998.
				40731.
				29821.

McFARLAND-JOHNSON ENGINEERS, INC.

20133.	13957.	9492.	6304.	4005.	3511.	3556.	3318.	3096.	2888.
2695.	2514.	2340.	2189.	2042.	1908.	1778.	1659.	1548.	1444.
1347.	1257.	1173.	1094.	1021.	953.	889.	829.	774.	722.
674.	629.	580.	547.	511.	475.	444.	415.	361.	361.

	PEAK	6-HOUR	24-HOUR	72-HOUR	TOTAL VOLUME
CFS	40998.	40665.	32905.	16405.	248798.
CMS	1161.	1157.	932.	466.	7045.
INCHES		1.13	3.00	5.49	0.91
MM		28.62	92.83	139.36	175.47
AC-FE		20264.	65206.	97975.	123300.
THOUS CU M		24995.	80505.	120651.	152170.

	HYDROGRAPH AT STA 2 FOR PLAN 1, RT10 4				
205.	190.	1190.	3340.	3580.	6501. 26009. 53298. 52951. 38767.
20173.	18182.	12539.	8273.	5310.	4954. 4623. 4313. 4024. 3755.
3503.	3269.	3050.	2640.	2055.	2477. 2311. 2157. 2012. 1877.
1752.	1634.	1520.	1423.	1327.	1239. 1156. 1076. 1006. 939.
870.	817.	702.	711.	664.	619. 578. 559. 503. 469.

	PEAK	6-HOUR	24-HOUR	72-HOUR	TOTAL VOLUME
CFS	53298.	53124.	42777.	21405.	323425.
CMS	1509.	1504.	1211.	606.	9156.
INCHES		1.48	4.75	7.13	8.98
MM		37.47	120.68	181.17	228.12
AC-FE		20343.	84846.	127300.	160376.
THOUS CU M		32493.	104656.	157100.	197821.

	HYDROGRAPH AT STA 2 FOR PLAN 1, RT10 5				
250.	233.	1472.	4118.	4407.	8001. 32012. 65597. 65170. 47713.
32212.	22378.	15167.	10182.	6535.	6098. 5689. 5308. 4953. 4621.
4312.	4023.	3754.	3902.	3268.	3049. 2845. 2654. 2476. 2311.
2156.	2011.	1877.	1751.	1634.	1524. 1422. 1327. 1238. 1155.
1078.	1006.	936.	870.	817.	702. 711. 664. 619. 578.

	PEAK	6-HOUR	24-HOUR	72-HOUR	TOTAL VOLUME
CFS	65597.	65384.	52648.	26344.	398061.
CMS	1858.	1851.	1491.	746.	11272.
INCHES		1.82	5.85	8.76	11.05
MM		46.12	148.53	222.97	260.76
AC-FE		32422.	104426.	156701.	197386.
THOUS CU M		39992.	128808.	193361.	243472.

	HYDROGRAPH AT STA 2 FOR PLAN 1, RT10 6				
313.	292.	1840.	5147.	5508.	10001. 40015. 61997. 81463. 59641.
40266.	27973.	18964.	12727.	8169.	7022. 7112. 6635. 6191. 5776.
5390.	5029.	4692.	4378.	4080.	3611. 3556. 3318. 3096. 2888.
2695.	2514.	2340.	2189.	2042.	1906. 1778. 1659. 1548. 1444.
1347.	1257.	1173.	1094.	1021.	953. 889. 829. 774. 722.

	PEAK	6-HOUR	24-HOUR	72-HOUR	TOTAL VOLUME
CFS	81997.	81730.	65610.	32931.	497577.
CMS	2322.	2314.	1864.	932.	14090.
INCHES		2.27	7.31	10.97	13.82
MM		57.64	185.67	27	350.95

McFARLAND-JOHNSON ENGINEERS, INC.

AC-FI
THOUS CU M 40527. 130532. 195951. 246732.
49989. 101009. 241702. 304340.

CUMULATIVE HYDROGRAPHS

CUMULATIVE INFLOW-MOUNT MORRIS DAM AND CANASERAGA CREEK INFLOW

ISIAU	ICUMP	IECOV	ITAPE	JPAT	JPRT	INAME	ISTAGE	IAUDI
2	2	0	0	0	0	1	0	0

SUM OF 2 HYDROGRAPHS AT			2 PLAN 1	RIID 1					
63.	58.	508.	1029.	1102.	2000.	8003.	16399.	10293.	11928.
8053.	5995.	3797.	2545.	1634.	1524.	1422.	1327.	1238.	1155.
1076.	1006.	938.	876.	817.	762.	711.	664.	619.	578.
539.	503.	469.	438.	408.	381.	356.	332.	310.	289.
269.	251.	235.	219.	204.	191.	178.	166.	155.	144.

	PEAK	6-HOUR	24-HOUR	72-HOUR	TOTAL VOLUME
CF3	10399.	10346.	13162.	6566.	99515.
CMS	464.	403.	373.	166.	2818.
INCHES		0.11	0.35	0.52	0.66
MM		2.74	8.62	13.24	16.68
AC-FI	8105.	26106.	39190.	9346.	
THOUS CU M	9998.	32202.	48340.	60868.	

SUM OF 2 HYDROGRAPHS AT			2 PLAN 1	RIID 2					
109.	102.	644.	1802.	1928.	3501.	14005.	28699.	28512.	20874.
14093.	9791.	6044.	4455.	2859.	2666.	2469.	2322.	2167.	2022.
1866.	1760.	1042.	1532.	1430.	1334.	1245.	1161.	1083.	1011.
943.	880.	821.	700.	715.	667.	622.	581.	542.	505.
472.	440.	411.	383.	357.	333.	311.	290.	271.	253.

	PEAK	6-HOUR	24-HOUR	72-HOUR	TOTAL VOLUME
CF3	28699.	28605.	23034.	11520.	174152.
CMS	813.	810.	652.	326.	4931.
INCHES		0.19	0.61	0.91	1.15
MM		4.79	15.44	23.18	29.18
AC-FI	14184.	45680.	68583.	86350.	
THOUS CU M	17496.	56353.	84596.	106519.	

SUM OF 2 HYDROGRAPHS AT			2 PLAN 1	RIID 3					
150.	146.	920.	2574.	2754.	5001.	20007.	40998.	40731.	29821.
20133.	13987.	9492.	6364.	4085.	3811.	3556.	3318.	3096.	2888.
2095.	2514.	2346.	4184.	6824.	7671.	7740.	7482.	7097.	6673.
6250.	5842.	5455.	5092.	4752.	4434.	4137.	3860.	3602.	3361.
3130.	2920.	2730.	2547.	2376.	2217.	2069.	1930.	1801.	1680.

PEAK 6-HOUR 24-HOUR 72-HOUR TOTAL VOLUME
McFARLAND-JOHNSON ENGINEERS, INC.

	CFS	40990.	40805.	32905.	16405.	330337.
CFS	1161.	1157.	932.	460.	9501.	
INCHES		0.27	0.67	1.30	2.23	
MM		6.85	22.06	33.11	56.70	
AC-FI		20204.	65200.	97970.	107771.	
THOUS CU M		24995.	80505.	120651.	206942.	

	SUM OF 2 HYDROGRAPHS AT			2 PLAN 1 RTIO 4		
203.	190.	1190.	3340.	3580.	5501.	26009.
20173.	18182.	25677.	32695.	30584.	27621.	24025.
10405.	15257.	14214.	13252.	12301.	11531.	10758.
8152.	7500.	7097.	6622.	6176.	5705.	5379.
4070.	3503.	3540.	3311.	3089.	2882.	2669.

	PEAK	6-HOUR	24-HOUR	72-HOUR	TOTAL VOLUME
CFS	53296.	53124.	42771.	31149.	641147.
CMS	1509.	1504.	1211.	882.	18155.
INCHES		0.35	1.13	2.47	4.23
MM		8.90	26.07	62.64	107.44
AC-FI		26343.	64840.	185349.	317924.
THOUS CU M		3493.	104650.	226024.	392153.

	SUM OF 2 HYDROGRAPHS AT			2 PLAN 1 RTIO 5		
250.	233.	1472.	4118.	4407.	8001.	32012.
47193.	93745.	75519.	54658.	43158.	30458.	20578.
20234.	18798.	17503.	10314.	15215.	14193.	13241.
10034.	9362.	6735.	8150.	7604.	7095.	6620.
5017.	4081.	4307.	4075.	3802.	3547.	3310.

	PEAK	6-HOUR	24-HOUR	72-HOUR	TOTAL VOLUME
CFS	93745.	84632.	67325.	51218.	943955.
CMS	2655.	2397.	1900.	1450.	26730.
INCHES		0.50	1.78	4.00	6.23
MM		14.18	45.13	102.99	158.18
AC-FI		41900.	133537.	304765.	468077.
THOUS CU M		51705.	164715.	375923.	577364.

	SUM OF 2 HYDROGRAPHS AT			2 PLAN 1 RTIO 6		
313.	292.	1640.	5147.	5508.	10001.	40015.
190555.	152045.	94980.	68682.	51109.	43840.	37566.
25262.	23484.	21672.	20390.	19017.	17740.	16551.
12542.	11702.	10918.	10167.	9505.	8809.	8275.
6271.	5851.	5459.	5094.	4753.	4434.	4137.

	PEAK	6-HOUR	24-HOUR	72-HOUR	TOTAL VOLUME
CFS	190555.	174600.	127080.	78018.	1347701.
CMS	5500.	4944.	3599.	2209.	38103.
INCHES		1.15	3.35	6.18	6.89
MM		29.26	85.18	156.89	225.84
AC-FI		86579.	252070.	464242.	668281.
THOUS CU M		106793.	310924.	572033.	824313.

MFARLAND-JOHNSON ENGINEERS, INC.

HYDROGRAPH ROUTING

ROUTE COMBINE FLOWS TO AVON GAGE USING MUSKINGUM METHOD

	ISIAR	ICOMP	IECON	ITAPE	JPLI	JPRF	INAME	ISIAGE	IAUTO
	3	1	0	0	0	0	1	0	0
ROUTING DATA									
JLOSS	CLOSS	Avg	IRES	ISARE	IPRF	IPRF		LSTR	
0.0	0.000	0.00	0	1	0	0		0	
NSIPS	NSIDL	LAG	AHSKK	X	TSK	S10RA	ISPRAT		
2	0	0	7.00	0.040	0.000	0.	0		
STATION 3, PLAN 1, R110 1									
OUTFLOW									
03.	62.	85.	211.	469.	807.	1669.	4155.	8182.	11512.
12359.	11110.	8945.	6820.	4958.	3522.	2560.	1992.	1661.	1456.
1315.	1200.	1119.	1040.	909.	904.	843.	780.	734.	684.
639.	596.	550.	519.	484.	452.	421.	393.	367.	342.
319.	298.	270.	259.	242.	226.	211.	197.	183.	171.
PEAK 6-HOUR 24-HOUR 72-HOUR TOTAL VOLUME									
CFS	12359.	11935.	10891.	6485.			99277.		
CMS	350.	338.	308.	184.			2611.		
INCHES		0.08	0.29	0.51			0.05		
MM		2.00	7.30	13.04			16.64		
AC-FI		5918.	21603.	38590.			49228.		
THOUS CU M		7300.	26640.	47600.			60722.		

STATION 3, PLAN 1, R110 2

	ISIAR	ICOMP	IECON	ITAPE	JPLI	JPRF	INAME	ISIAGE	IAUTO
	3	1	0	0	0	0	1	0	0
OUTFLOW									
109.	109.	149.	370.	821.	1413.	2921.	7272.	14319.	20147.
21627.	19443.	15724.	11935.	8676.	6164.	4480.	3466.	2907.	2548.
2302.	2114.	1950.	1821.	1096.	1581.	1475.	1376.	1284.	1198.
1117.	1043.	973.	908.	847.	790.	737.	688.	642.	599.
559.	521.	460.	454.	423.	395.	369.	344.	321.	299.
PEAK 6-HOUR 24-HOUR 72-HOUR TOTAL VOLUME									
CFS	21627.	20887.	19060.	11349.			173756.		
CMS	612.	591.	540.	321.			4920.		
INCHES		0.14	0.50	0.90			1.15		
MM		3.50	12.78	22.62			29.11		
AC-FI		10357.	37804.	67532.			86150.		
THOUS CU M		12775.	46631.	83299.			106264.		

STATION 3, PLAN 1, R110 3

	ISIAR	ICOMP	IECON	ITAPE	JPLI	JPRF	INAME	ISIAGE	IAUTO
	3	1	0	0	0	0	1	0	0
OUTFLOW									
156.	155.	213.	528.	1173.	2018.	4173.	10388.	20456.	28781.

McFARLAND-JOHNSON ENGINEERS, INC.

30090.	27770.	22403.	17950.	12395.	4605.	6401.	4981.	4152.	3640.
3209.	3020.	2757.	2755.	3284.	4454.	5157.	6609.	7111.	7182.
7010.	0719.	5300.	5981.	5604.	5211.	4896.	4571.	4260.	3961.
3714.	3400.	3234.	3017.	2815.	2627.	2451.	2287.	2134.	1991.

	PEAK	6-HOUR	24-HOUR	72-HOUR	TOTAL VOLUME
CFS	30090.	29839.	27226.	16213.	534220.
CAS	875.	845.	771.	459.	9404.
INCHES		0.20	0.72	1.28	2.21
AM		5.00	18.25	32.60	56.01
AC-FT		14796.	54000.	90474.	165732.
INCHES CU M		18251.	66010.	118999.	204427.

STATION 3, PLAN 1, RT10 4

OUTFLOW									
203.	202.	271.	687.	1525.	2623.	5425.	13504.	26593.	37415.
40105.	30109.	30232.	21337.	27909.	29057.	28135.	27100.	24799.	22402.
20392.	18039.	17152.	15807.	14730.	13705.	12767.	11904.	11100.	10354.
9059.	9012.	8400.	7845.	7320.	6829.	6372.	5945.	5547.	5170.
4829.	4500.	4204.	3922.	3660.	3415.	3166.	2973.	2774.	2586.

	PEAK	6-HOUR	24-HOUR	72-HOUR	TOTAL VOLUME
CFS	40105.	38790.	35525.	29573.	635801.
CAS	1137.	1098.	1006.	837.	18004.
INCHES		0.26	0.94	2.34	4.19
AM		6.50	23.81	59.47	106.54
AC-FT		19235.	70404.	175970.	315273.
INCHES CU M		23726.	66910.	217055.	388884.

STATION 3, PLAN 1, RT10 5

OUTFLOW									
250.	249.	340.	845.	1877.	3229.	6677.	16621.	32730.	46050.
50592.	53045.	62547.	69218.	66231.	57490.	48888.	41019.	34660.	29802.
20193.	23465.	21378.	19050.	18191.	16890.	15727.	14655.	13664.	12745.
11109.	11092.	10349.	9656.	9009.	8405.	7843.	7317.	6827.	6370.
5944.	5540.	5174.	4826.	4504.	4203.	3921.	3659.	3414.	3185.

	PEAK	6-HOUR	24-HOUR	72-HOUR	TOTAL VOLUME
CFS	69218.	67725.	63442.	49108.	937370.
CAS	1900.	1910.	1795.	1392.	26544.
INCHES		0.45	1.07	3.89	6.18
AM		11.35	42.52	98.87	157.08
AC-FT		33583.	125635.	292508.	464815.
INCHES CU M		41423.	155216.	360877.	573340.

STATION 3, PLAN 1, RT10 6

OUTFLOW									
313.	311.	425.	1056.	2346.	4036.	8347.	20776.	40912.	57502.
74000.	163075.	127001.	122938.	103498.	82288.	64979.	52416.	43468.	37120.
32585.	29241.	26050.	24531.	22710.	21109.	19652.	16315.	17079.	15930.
14001.	13000.	12930.	12009.	11261.	10507.	9803.	9147.	8534.	7903.
7429.	6932.	6400.	6035.	5630.	5253.	4902.	4573.	4267.	3981.

McFARLAND-JOHNSON ENGINEERS, INC. 

ITEM	ITEM	ITEM	ITEM
UPC	127001.	125000	24-HUUR
C.S.	3595.	111620.	75409.
INCHES		3540.	2137.
MM		0.82	2.95
AC-FT		20.95	74.82
FTS	61983.	22139.	151.71
CU IN	70453.	273987.	449071.
CU FT			553321.

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LHID	LNU	HYDROGRAPH			NAME	NAME	LUCAN
		PAKEA	SNAP	FRSDA			
1	1	270.00	0.00	2450.00	HALIO	1500	1
1	1	270.00	0.00	2450.00	HALIO	0	0

SPR	EAST			WEST			NORTH			SOUTH		
	PRECIP	TEMP	WIND									
0.00	44.5	41.00	W12	52.00	53.00	W24	74.00	74.00	W48	87.00	87.00	W96
0.00	44.0	41.00	W12	52.00	53.00	W24	74.00	74.00	W48	87.00	87.00	W96

THE SP2 COMPUTED BY THE PROGRAM IS 0.925

1000. 4700. UNIT GRAPH FOLDS 19600. CFS UN 0.71 INCH'S OVR THE AREA
1000. 3100. UNIT GRAPH FOLDS 3400. 2200. 1500. 900. 500. 200. 100.

RECESSION DATA										CUMP Q	
QRCSEN= -0.10					PERIOD FLWA					LOSS	
PERIOD	PERIOD	PERIOD	PERIOD	PERIOD	PERIOD	PERIOD	PERIOD	PERIOD	PERIOD	EXCS	LOSS
0.01	0.00	0.11	0.00	0.11	239.	1.07	12.00	26	0.00	0.00	0.00
1.01	1.00	1.50	0.50	0.50	223.	1.07	18.00	27	0.00	0.00	0.00
1.01	1.00	1.40	0.53	0.83	835.	1.08	0.00	28	0.00	0.00	0.00
1.02	0.00	4	0.17	0.00	3143.	1.08	0.00	29	0.00	0.00	0.00
1.02	0.00	5	0.05	0.05	3431.	1.08	12.00	30	0.00	0.00	0.00
1.02	1.00	6	2.85	2.45	4789.	1.08	18.00	31	0.00	0.00	0.00
1.02	1.00	7	8.34	7.74	20101.	1.09	0.00	32	0.00	0.00	0.00
1.03	0.00	8	0.36	0.00	49478.	1.09	0.00	33	0.00	0.00	0.00
1.03	0.00	9	0.30	0.00	49698.	1.09	12.00	34	0.00	0.00	0.00
1.03	1.00	10	0.00	0.00	33098.	1.09	16.00	35	0.00	0.00	0.00
1.03	1.00	11	0.00	0.00	21969.	1.10	0.00	36	0.00	0.00	0.00
1.04	0.00	12	0.00	0.00	14660.	1.10	0.00	37	0.00	0.00	0.00
1.04	0.00	13	0.00	0.00	8706.	1.10	12.00	38	0.00	0.00	0.00
1.04	1.00	14	0.00	0.00	4952.	1.10	18.00	39	0.00	0.00	0.00
1.04	1.00	15	0.00	0.00	4021.	1.11	0.00	40	0.00	0.00	0.00

1.05	0.00	17	0.00	0.00	0.00	4023.	1.11	12.00	42	0.00	0.00	0.00	711.
1.05	12.00	18	0.00	0.00	0.00	3753.	1.11	18.00	43	0.00	0.00	0.00	663.
1.05	18.00	19	0.00	0.00	0.00	3502.	1.12	0.00	44	0.00	0.00	0.00	619.
1.05	0.00	20	0.00	0.00	0.00	3267.	1.12	6.00	45	0.00	0.00	0.00	578.
1.05	0.00	21	0.00	0.00	0.00	3049.	1.12	12.00	46	0.00	0.00	0.00	539.
1.05	12.00	22	0.00	0.00	0.00	2844.	1.12	18.00	47	0.00	0.00	0.00	503.
1.05	18.00	23	0.00	0.00	0.00	2654.	1.13	0.00	48	0.00	0.00	0.00	469.
1.07	0.00	24	0.00	0.00	0.00	2476.	1.13	6.00	49	0.00	0.00	0.00	438.
1.07	6.00	25	0.00	0.00	0.00	2310.	1.13	12.00	50	0.00	0.00	0.00	408.

SUM 15.05 11.04 4.01 279293.
(382.)(280.)(102.)(7908.69)

	PEAK	0-HOUR	24-HOUR	72-HOUR	TOTAL VOLUME
CFS	49098.	49588.	38477.	18398.	278970.
CMS	1407.	1404.	1090.	521.	7900.
INCHES		1.00	5.59	8.02	10.14
AM		45.77	142.05	203.76	257.48
AC-FI		24589.	70318.	109474.	138332.
INCHES CU M		30330.	94137.	135034.	170650.

	HYDROGRAPH AT STA		3 FOR PLAN 1, RT10 1				
45.	107.	029.	680.	958.	4020.	9696.	9940.
4394.	2932.	175.	990.	924.	862.	751.	700.
610.	569.	531.	495.	462.	431.	402.	375.
305.	284.	205.	248.	231.	210.	201.	188.
152.	142.	133.	124.	116.	108.	101.	94.
							88.
							82.

	PEAK	0-HOUR	24-HOUR	72-HOUR	TOTAL VOLUME
CFS	9940.	9918.	7095.	3080.	55794.
CMS	281.	281.	218.	104.	1580.
INCHES	0.36	1.12	1.60	2.03	
AM	9.15	28.41	40.75	51.50	
AC-FI	4918.	15264.	21095.	27606.	
INCHES CU M	6066.	16827.	27007.	34126.	

	HYDROGRAPH AT STA		3 FOR PLAN 1, RT10 2				
84.	78.	292.	1100.	1201.	1070.	7035.	17317.
7689.	5131.	5069.	1733.	1617.	1509.	1406.	1314.
1067.	990.	929.	667.	809.	754.	704.	657.
533.	498.	464.	433.	404.	377.	352.	328.
207.	249.	232.	217.	202.	189.	176.	164.
							153.
							143.

	PEAK	0-HOUR	24-HOUR	72-HOUR	TOTAL VOLUME
CFS	17394.	17356.	13467.	6439.	97640.
CMS	493.	491.	361.	182.	2765.
INCHES	0.63	1.96	2.81	3.55	
AM	16.02	49.72	71.32	90.12	
AC-FI	8606.	26711.	38316.	48416.	
INCHES CU M	10615.	32948.	47262.	59721.	

	HYDROGRAPH AT STA		3 FOR PLAN 1, RT10 3				
119.	111.	416.	1571.	1716.	2394.	10051.	24739.
10905.	7330.	4384.	2476.	2310.	2150.	2011.	1877.
1524.	1422.	1327.	1238.	1155.	1078.	1006.	938.
							675.
							817.

McFARLAND-JOHNSON ENGINEERS, INC. 

752.	711.	603.	019.	576.	539.	503.	469.	436.	408.
3d1.	350.	332.	310.	289.	269.	251.	235.	219.	204.

	PEAK	6-HOUR	24-HOUR	72-HOUR	TOTAL VOLUME
CFS	21649.	24794.	19239.	7199.	139465.
CMS	704.	702.	545.	260.	3950.
Inches		0.90	2.80	4.01	5.07
MM		22.48	71.03	101.88	126.74
AC-FT		12294.	38159.	54737.	69160.
INCHES CU M		15165.	47003.	67517.	85315.

HYDROGRAPH AT STA 3 FOR PLAN 1, RIO 4.					
155.	145.	543.	2043.	2230.	3113.
14266.	9529.	5099.	3219.	3003.	2802.
1962.	1849.	1725.	1615.	1502.	1491.
991.	924.	803.	805.	751.	701.
495.	452.	431.	402.	375.	350.

	PEAK	6-HOUR	24-HOUR	72-HOUR	TOTAL VOLUME
CFS	32303.	32232.	25010.	11958.	181331.
CMS	915.	913.	708.	339.	5135.
Inches		1.17	3.64	5.21	6.59
MM		29.75	92.33	132.45	167.36
AC-FT		15963.	49507.	71158.	89916.
INCHES CU M		19714.	61189.	87772.	110910.

HYDROGRAPH AT STA 3 FOR PLAN 1, RIO 5					
191.	178.	608.	2514.	2745.	3831.
17575.	11728.	7015.	3962.	3697.	3449.
2439.	2276.	2123.	1901.	1648.	1725.
1219.	1158.	1002.	990.	924.	852.
610.	509.	531.	495.	462.	431.

	PEAK	6-HOUR	24-HOUR	72-HOUR	TOTAL VOLUME
CFS	39756.	39670.	30782.	14715.	223176.
CMS	1120.	1123.	872.	417.	6320.
Inches		1.44	4.47	6.42	8.11
MM		36.61	113.64	163.01	205.98
AC-FT		19671.	61054.	87579.	110600.
INCHES CU M		24264.	75310.	108027.	136504.

HYDROGRAPH AT STA 3 FOR PLAN 1, RIO 6					
239.	223.	835.	3143.	3431.	4789.
21969.	14660.	8108.	4952.	4621.	4311.
3049.	2844.	2654.	2476.	2310.	2156.
1524.	1422.	1327.	1238.	1155.	1076.
762.	711.	603.	019.	576.	539.

	PEAK	6-HOUR	24-HOUR	72-HOUR	TOTAL VOLUME
CFS	49596.	49588.	38477.	18398.	278970.
CMS	1407.	1404.	1090.	521.	7900.
Inches		1.80	5.59	8.02	10.14
MM		45.77	142.05	203.76	257.48
AC-FT		24589.	76316.	109474.	138332.
INCHES CU M		30330.	94137.	135	170630.

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COMBINE HYDROGRAPHS

COMBINE FLOWS AT AVON GAGE

ISFAQ	ICOMP	IECON	ITAPE	JPLI	JPRI	IRNAME	ISIAGE	IAUTO
3	2	0	0	0	0	1	0	0

SUM OF 2 HYDROGRAPHS AT				3 PLAN 1	RTIO 1				
110.	107.	252.	840.	115e.	1705.	5690.	14051.	18122.	18252.
16752.	14042.	10739.	7811.	5882.	4385.	3365.	2743.	2361.	2109.
1325.	1777.	1950.	1530.	1431.	1335.	1245.	1162.	1084.	1011.
943.	680.	521.	766.	715.	607.	622.	561.	542.	506.
472.	440.	411.	363.	357.	334.	311.	290.	271.	253.

	PEAK	6-HOUR	24-HOUR	72-HOUR	TOTAL VOLUME
CFS	18252.	18187.	10793.	10112.	155071.
CFS	517.	515.	470.	286.	4391.
INCHES		0.10	0.36	0.68	0.67
MM		2.56	9.53	17.41	21.99
AC-FT		9018.	33309.	60171.	76695.
INCHES Cu A		11124.	41066.	74219.	94849.

SUM OF 2 HYDROGRAPHS AT				3 PLAN 1	RTIO 2				
193.	167.	441.	1470.	2022.	3089.	9957.	24529.	31713.	31941.
29317.	24571.	18795.	13609.	10294.	7673.	5888.	4800.	4132.	3691.
3309.	3110.	2887.	2087.	2505.	2330.	2179.	2033.	1890.	1769.
1651.	1540.	1437.	1341.	1251.	1167.	1089.	1010.	948.	885.
525.	770.	719.	670.	626.	584.	545.	508.	474.	442.

	PEAK	6-HOUR	24-HOUR	72-HOUR	TOTAL VOLUME
CFS	31941.	31827.	29388.	17096.	271375.
CFS	904.	901.	832.	501.	7654.
INCHES		0.18	0.66	1.19	1.52
MM		4.51	10.07	30.12	38.49
AC-FT		15782.	58290.	105298.	134566.
INCHES Cu A		19467.	71900.	129884.	165955.

SUM OF 2 HYDROGRAPHS AT				3 PLAN 1	RTIO 3				
270.	267.	650.	2099.	2889.	4412.	14224.	35127.	45305.	45630.
41881.	35106.	20447.	19527.	14705.	10902.	8412.	6657.	5903.	5273.
4813.	4443.	4124.	3993.	4439.	5541.	6763.	7608.	7986.	7999.
7776.	7430.	7024.	6000.	6182.	5780.	5398.	5040.	4703.	4389.
4090.	3611.	3500.	3327.	3104.	2690.	2702.	2521.	2352.	2195.

	PEAK	6-HOUR	24-HOUR	72-HOUR	TOTAL VOLUME
CFS	45030.	45467.	41963.	25280.	473711.
CFS	1294.	1287.	1169.	92	13414.

McFARLAND-JOHNSON ENGINEERS, INC.

INCHES	0.25	0.94	1.09	2.65
cu	0.45	23.02	45.02	67.10
AC-FI	22540.	03272.	150420.	234890.
inches cu	27810.	102710.	105540.	259740.

SUM OF 2 HYDROGRAPHS AT				PLAN 1 RT10 4					
356.	347.	019.	2729.	3755.	5730.	16491.	45665.	56890.	59317.
54445.	45038.	05932.	30550.	30972.	31059.	31349.	29539.	27070.	24586.
22373.	20488.	15477.	17477.	16232.	15100.	14074.	13122.	12238.	11416.
10050.	9930.	9211.	0030.	8071.	7530.	7026.	6555.	6110.	5707.
5325.	4908.	4035.	4325.	4035.	3755.	3513.	3270.	3058.	2853.

	PEAK	6-HOUR	24-HOUR	72-HOUR	TOTAL VOLUME
CFS	59319.	59108.	54578.	39740.	817132.
CAS	1080.	1674.	1545.	1125.	23139.
INCHES	0.33	1.22	2.00	4.56	
cu	8.38	30.90	67.64	115.89	
AC-FI	29310.	106254.	236500.	405109.	
inches cu	36153.	133529.	291726.	499794.	

SUM OF 2 HYDROGRAPHS AT				PLAN 1 RT10 5					
441.	421.	1009.	3359.	4022.	7000.	22759.	50203.	72468.	73008.
60167.	00373.	09501.	73160.	69928.	61347.	52107.	44022.	37401.	32416.
20632.	25701.	23501.	21659.	20040.	18621.	17330.	16150.	15005.	14052.
13109.	12230.	11410.	10640.	9933.	9255.	8647.	8008.	7528.	7024.
6553.	0114.	5705.	5323.	4900.	4634.	4324.	4034.	3764.	3512.

	PEAK	6-HOUR	24-HOUR	72-HOUR	TOTAL VOLUME
CFS	73160.	72748.	69393.	61291.	1160553.
CAS	2072.	2060.	1905.	1730.	32603.
INCHES	0.41	1.55	4.11	6.48	
cu	10.32	39.37	104.31	164.59	
AC-FI	36073.	137639.	36407.	575481.	
inches cu	44496.	169775.	449800.	709845.	

SUM OF 2 HYDROGRAPHS AT				PLAN 1 RT10 6					
501.	334.	1201.	4199.	5778.	6825.	28448.	70254.	90610.	91260.
95836.	116338.	135829.	127691.	108119.	80599.	69002.	50172.	46970.	40367.
35033.	32085.	29303.	27007.	25027.	23264.	21664.	20192.	18630.	17564.
10305.	15207.	14203.	13507.	12410.	11585.	10809.	10085.	9410.	8779.
8192.	7643.	7131.	6654.	6208.	5792.	5404.	5043.	4705.	4390.

	PEAK	6-HOUR	24-HOUR	72-HOUR	TOTAL VOLUME
CFS	135329.	131800.	121009.	90635.	161847.
CAS	3840.	3734.	3427.	2500.	45629.
INCHES	0.74	2.70	6.07	9.04	
cu	18.70	68.00	154.25	229.53	
AC-FI	05385.	240018.	539314.	802530.	
inches cu	201651.	296057.	665234.	989913.	

HYDROGRAPH ROUTING

ROUTE FLUXES IN CONFLUENCE OF BLACK CREEK BY DASSING FLUXES

	ISFLX	ICOMP	IECJN	ITAPE	JFLX	JPKI	INAME	ISTAGE	IRUTG
	4	1	0	0	0	0	1	0	0
ROUTING DATA									
LOSS	CLoss	AVG	IRES	ISAME	IUPi	IPMF		LSTR	
0.0	0.000	0.00	0	1	0	0		0	
VSFLX	VSFLX	LAG	AMSKR		TSR	SIDRA	ISPKAI		
0	0	1	0.000	0.000	0.000	0.	0		

STATION 4, PLAN 1, RIID 1

OUTFLUX

110.	110.	107.	254.	840.	1156.	1765.	5690.	14051.	18122.
18252.	10752.	14942.	10739.	7811.	5802.	4385.	3305.	2743.	2361.
2109.	1925.	1777.	1650.	1536.	1431.	1335.	1245.	1162.	1084.
1011.	943.	660.	621.	700.	715.	667.	622.	581.	542.
500.	472.	440.	411.	383.	357.	334.	311.	290.	271.

	PEAK	6-HOUR	24-HOUR	72-HOUR	TOTAL VOLUME
CFS	10252.	16187.	16793.	16112.	154920.
CFS	517.	515.	476.	266.	4367.
INCHES		0.10	0.36	0.58	0.87
INCHES		2.56	9.53	17.41	21.97
AC-FI		9018.	33309.	60171.	70826.
INCHES CU M		11124.	41086.	74219.	94755.

STATION 4, PLAN 1, RIID 2

OUTFLUX

193.	193.	187.	441.	1470.	2022.	3089.	9957.	24589.	31713.
31941.	29317.	24574.	18793.	130c9.	10294.	7673.	5888.	4600.	4132.
3091.	3309.	3110.	2667.	2037.	2505.	2336.	2179.	2033.	1896.
1709.	1051.	1540.	1437.	1341.	1251.	1167.	1069.	1016.	948.
605.	629.	770.	719.	670.	626.	584.	545.	508.	474.

	PEAK	6-HOUR	24-HOUR	72-HOUR	TOTAL VOLUME
CFS	31941.	21827.	29388.	17696.	271110.
CFS	904.	901.	832.	501.	7077.
INCHES		0.16	0.66	1.19	1.51
INCHES		4.51	10.07	30.12	38.45
AC-FI		15782.	58290.	105298.	134435.
INCHES CU M		19467.	71900.	129864.	165823.

STATION 4, PLAN 1, RIID 3

OUTFLUX

476.	270.	207.	630.	2099.	2889.	4412.	14224.	35127.	45305.
45030.	41661.	35106.	20847.	19527.	14705.	10902.	8412.	6857.	5903.
5273.	4613.	4443.	4124.	3993.	4439.	6541.	6703.	7608.	7986.

McFARLAND-JOHNSON ENGINEERS, INC.

7999.	1715.	7430.	1024.	0000.	0102.	5700.	5370.	5940.	4703.
4369.	4490.	3021.	3500.	3327.	3106.	2890.	2742.	2521.	2352.

	PEAK	0-HOUR	24-HOUR	72-HOUR	TOTAL	VOLUME
CFS	40030.	40407.	41453.	25250.	471715.	
CFS	1292.	1231.	1189.	710.	13327.	
14CHCS		0.25	0.94	1.05		2.03
RA		0.45	23.62	43.02		66.90
AC-FI	22540.	03274.	150420.	23397.		
INDUS CUA	27010.	102715.	105540.	205510.		

STATION 4, PLAN 1, RIII 4

OUTFLOWS

359.	358.	347.	319.	2729.	3755.	5730.	16471.	45665.	58696.
59319.	5445.	45530.	35932.	30330.	30972.	31559.	31349.	29539.	27076.
24560.	22373.	20400.	18877.	17477.	16232.	16106.	14674.	13122.	12238.
11410.	10050.	9930.	9271.	6050.	6071.	7530.	7042.	6555.	6116.
5707.	5325.	4900.	4635.	4325.	4035.	3705.	3513.	3276.	3056.

	PEAK	0-HOUR	24-HOUR	72-HOUR	TOTAL	VOLUME
CFS	59319.	59105.	54578.	39746.	514534.	
CFS	1084.	1074.	1045.	1175.	23035.	
14CHCS		0.33	1.22	2.00		3.55
RA		6.38	36.95	67.54		115.02
AC-FI	29310.	10254.	230306.	403901.		
INDUS CUA	36155.	133529.	291725.	496205.		

STATION 4, PLAN 1, RIII 5

OUTFLOWS

441.	441.	427.	1009.	3359.	4522.	7660.	22759.	56203.	72488.
73000.	66167.	65373.	09561.	73190.	69923.	61347.	52107.	44022.	37461.
32416.	28632.	25701.	23501.	21639.	20040.	16621.	17330.	16156.	15065.
14052.	15109.	12230.	11410.	10646.	9933.	9268.	8647.	8068.	7528.
7024.	6553.	6114.	5705.	5323.	4956.	4634.	4324.	4034.	3764.

	PEAK	0-HOUR	24-HOUR	72-HOUR	TOTAL	VOLUME
CFS	73109.	72748.	69393.	51291.	1157355.	
CFS	2072.	2060.	1965.	1730.	32773.	
14CHCS		0.41	1.55	4.11		6.06
RA		10.32	39.37	104.31		164.14
AC-FI	36073.	137639.	364707.	573695.		
INDUS CUA	44496.	169775.	449600.	707339.		

STATION 4, PLAN 1, RIII 6

OUTFLOWS

551.	551.	534.	1201.	4199.	5775.	6625.	28448.	70254.	90610.
91200.	95839.	115330.	135629.	127691.	168119.	66595.	69002.	56172.	46970.
40367.	35633.	32905.	29303.	27007.	25027.	23264.	21664.	20192.	18830.
17504.	16305.	15207.	14203.	13307.	12416.	11565.	10609.	10085.	9410.
8779.	8192.	763.	7131.	6554.	6206.	5792.	5494.	5043.	4705.

PEAK	0-HOUR	24-HOUR	72-HOUR	TOTAL	VOLUME
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McFARLAND-JOHNSON ENGINEERS, INC.

CCS	133747.	131050.	121059.	90030.	1044434.
C4S	3046.	3734.	3427.	2560.	40710.
Inches		0.74	2.10	0.07	0.01
in		18.70	68.65	154.25	226.97
AC-FI	65385.	240018.	539311.	800554.	
FEET CU M	80051.	290057.	665234.	987469.	

SUB-AREA RUNOFF COMPUTATION

HUNEDOKE CREEK 1YFLUM HYDROGRAPH

10IAQ	ICUMP	1ECON	1TAPE	JPLF	JPRF	INAME	1STAGE	IAUTO
4	0	0	0	0	0	1	0	0

HYDROGRAPH DATA									
IHYDG	IUNG	TAREA	SNAP	IRSDA	IRSPC	RATIO	ISNOW	ISAME	LOCAL
1	-1	200.00	0.00	2460.00	0.00	0.000	0	1	0

PRECIP DATA							
SPFE	PMS	R6	R12	R24	R48	R72	R96
0.00	22.00	41.00	55.00	63.00	74.00	0.00	0.00

IRSPC COMPUTED BY THE PROGRAM IS 0.925

LOSS DATA										
LRUPI	SIRRN	DLRKR	R10L	ERAIN	SIRKS	R10K	SIRIL	CNSIL	ALSMX	R1IMP
0	0.00	0.00	1.00	0.00	0.00	1.00	1.00	0.10	0.00	0.00

GIVEN UNIT GRAPH, NUHGG= 12									
100.	500.	3000.	6300.	5000.	3600.	2400.	1700.	1300.	1000.
700.	400.								

UNIT GRAPH TOTALS 27200. CFS OR 0.97 INCHES OVER THE AREA

RECEDITION DATA										
SIR10=	-1.00	QRC5N=	-0.10	R10R=	2.00					

0	MO.DA	HR.MN	PERIOD	RAIN	EXCS	LOSS	END-OF-PERIOD FLOW		MO.DA	HR.MN	PERIOD	RAIN	EXCS	LOSS	CUMP Q
							COMP Q	MO.DA							
1.01	6.00	1	0.11	0.00	0.11	243.	1.07	12.00	20	0.00	0.00	0.00	0.00	0.00	3461.
1.01	12.00	2	0.50	0.00	0.50	226.	1.07	18.00	27	0.00	0.00	0.00	0.00	0.00	3229.
1.01	18.00	3	1.46	0.63	0.83	274.	1.08	0.00	28	0.00	0.00	0.00	0.00	0.00	3013.
1.02	0.00	4	0.17	0.00	0.17	511.	1.08	6.00	29	0.00	0.00	0.00	0.00	0.00	2811.
1.02	6.00	5	0.65	0.05	0.60	2447.	1.08	12.00	30	0.00	0.00	0.00	0.00	0.00	2623.
1.02	12.00	6	2.85	2.25	0.60	4374.	1.08	18.00	31	0.00	0.00	0.00	0.00	0.00	2447.
1.02	18.00	7	6.34	7.74	0.60	5754.	1.09	0.00	32	0.00	0.00	0.00	0.00	0.00	2283.
1.03	0.00	8	0.98	0.38	0.00	14728.	1.09	6.00	33	0.00	0.00	0.00	0.00	0.00	2131.
1.03	6.00	9	0.00	0.00	0.00	44142.	1.09	12.00	34	0.00	0.00	0.00	0.00	0.00	1988.
1.03	12.00	10	0.00	0.00	0.00	64082.	1.09	18.00	35	0.00	0.00	0.00	0.00	0.00	1855.
1.03	18.00	11	0.00	0.00	0.00	54864.	1.10	0.00	36	0.00	0.00	0.00	0.00	0.00	1731.
1.04	0.00	12	0.00	0.00	0.00	36154.	1.10	6.00	37	0.00	0.00	0.00	0.00	0.00	1615.
1.04	6.00	13	0.00	0.00	0.00	24362.	1.10	12.00	38	0.00	0.00	0.00	0.00	0.00	1507.
1.04	12.00	14	0.00	0.00	0.00	17353.	1.10	18.00	39	0.00	0.00	0.00	0.00	0.00	1406.
1.04	18.00	15	0.00	0.00	0.00	13077.	1.11	0.00	40	0.00	0.00	0.00	0.00	0.00	1311.
1.05	0.00	16	0.00	0.00	0.00	9909.	1.11	6.00	41	0.00	0.00	0.00	0.00	0.00	1224.
1.05	6.00	17	0.00	0.00	0.00	6773.	1.11	12.00	42	0.00	0.00	0.00	0.00	0.00	1142.

MFARLAND-JOHNSON ENGINEERS, INC.

1.05	12.00	16	0.00	0.00	0.00	6020.	1.11	18.00	43	0.00	0.00	0.00	105.
1.05	18.00	19	0.00	0.00	0.00	5022.	1.12	0.00	44	0.00	0.00	0.00	994.
1.06	0.00	20	0.00	0.00	0.00	5240.	1.12	0.00	45	0.00	0.00	0.00	927.
1.06	6.00	21	0.00	0.00	0.00	4895.	1.12	12.00	46	0.00	0.00	0.00	865.
1.06	12.00	22	0.00	0.00	0.00	4567.	1.12	18.00	47	0.00	0.00	0.00	807.
1.06	18.00	23	0.00	0.00	0.00	4261.	1.13	0.00	48	0.00	0.00	0.00	753.
1.07	0.00	24	0.00	0.00	0.00	3976.	1.13	6.00	49	0.00	0.00	0.00	703.
1.07	6.00	25	0.00	0.00	0.00	3709.	1.13	12.00	50	0.00	0.00	0.00	656.

SUM 15.05 11.04 4.01 380190.
(384.)(280.)(102.)(10765.78)

	PEAK	6-HOUR	24-HOUR	72-HOUR	TOTAL VOLUME
CFS	64082.	59473.	47348.	24709.	379741.
CMS	1815.	1684.	1341.	701.	10753.
INCHES	.	2.13	6.78	10.63	13.59
MM	.	54.05	172.11	270.11	345.10
AC-FT	29491.	93913.	147365.	188301.	
THOUS CU M	36376.	115840.	181797.	232266.	

	HYDROGRAPH AT STA 4 FOR PLAN 1, RTIO 1								
49.	45.	55.	102.	489.	875.	1151.	2946.	8828.	12816.
10573.	7238.	4672.	3477.	2015.	1982.	1355.	1205.	1124.	1049.
979.	913.	852.	795.	742.	692.	646.	603.	502.	525.
489.	457.	426.	396.	371.	346.	323.	301.	281.	262.
245.	226.	213.	199.	185.	173.	161.	151.	141.	131.

	PEAK	6-HOUR	24-HOUR	72-HOUR	TOTAL VOLUME
CFS	12816.	11895.	9470.	4954.	75948.
CMS	363.	337.	268.	140.	2151.
INCHES	.	0.43	1.36	2.13	2.72
MM	.	10.81	34.42	54.02	69.02
AC-FT	5898.	18783.	29477.	37600.	
THOUS CU M	7275.	23168.	36359.	46453.	

	HYDROGRAPH AT STA 4 FOR PLAN 1, RTIO 2								
85.	79.	96.	179.	857.	1531.	2014.	5155.	15450.	22429.
19203.	12667.	6527.	6084.	4577.	3468.	2371.	2109.	1968.	1836.
1713.	1598.	1491.	1391.	1298.	1211.	1130.	1055.	984.	918.
857.	799.	746.	696.	649.	606.	565.	527.	492.	459.
426.	400.	373.	348.	325.	303.	283.	264.	246.	230.

	PEAK	6-HOUR	24-HOUR	72-HOUR	TOTAL VOLUME
CFS	22429.	20816.	16572.	8669.	132909.
CMS	635.	589.	469.	245.	3764.
INCHES	.	0.74	2.37	3.72	4.76
MM	.	18.92	60.24	94.54	120.78
AC-FT	10322.	32870.	51585.	65905.	
THOUS CU M	12732.	40544.	63629.	81293.	

	HYDROGRAPH AT STA 4 FOR PLAN 1, RTIO 3								
121.	113.	137.	255.	1224.	2187.	2877.	7304.	22071.	32041.
27452.	18096.	12181.	8692.	6536.	4954.	3387.	3013.	2611.	2623.
2447.	2263.	2131.	1988.	1855.	1731.	1615.	1500.	1406.	1311.
1224.	1142.	1065.	994.	927.	865.	807.	753.	703.	656.

612.	571.	533.	497.	464.	433.	404.	377.	351.	328.
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		PEAK	6-HOUR	24-HOUR	72-HOUR	TOTAL VOLUME	
		CFS	32041.	29737.	23674.	12364.	189871.
		CMS	907.	842.	670.	351.	5377.
		INCHES		1.00	3.39	5.32	6.79
		MM		27.02	86.06	135.05	172.55
		AC-FT		14745.	46950.	73093.	94151.
		THOUS CU M		18188.	57920.	90898.	110133.

		HYDROGRAPH AT STA 4 FOR PLAN 1, RTIO 4							
158.	147.	178.	332.	1591.	2843.	3740.	9573.	28692.	41653.
35002.	23525.	15835.	11299.	8500.	6441.	4405.	3917.	3655.	3410.
3102.	2908.	2770.	2584.	2411.	2250.	2099.	1958.	1827.	1705.
1591.	1484.	1385.	1292.	1206.	1125.	1050.	979.	914.	852.
795.	742.	692.	646.	603.	562.	525.	490.	457.	426.

		PEAK	6-HOUR	24-HOUR	72-HOUR	TOTAL VOLUME	
		CFS	41653.	38658.	30776.	16100.	246832.
		CMS	1179.	1095.	871.	450.	6989.
		INCHES		1.38	4.40	6.91	8.83
		MM		35.13	111.87	175.57	224.31
		AC-FT		19169.	61043.	95800.	122390.
		THOUS CU M		23645.	75296.	118168.	150973.

		HYDROGRAPH AT STA 4 FOR PLAN 1, RTIO 5							
194.	161.	219.	409.	1958.	3499.	4603.	11782.	35314.	51206.
43892.	28954.	19490.	13907.	10461.	7927.	5419.	4821.	4498.	4197.
3910.	3053.	3409.	3181.	2968.	2769.	2583.	2410.	2249.	2098.
1956.	1627.	1704.	1590.	1484.	1384.	1292.	1205.	1124.	1049.
979.	913.	852.	795.	742.	692.	640.	603.	562.	525.

		PEAK	6-HOUR	24-HOUR	72-HOUR	TOTAL VOLUME	
		CFS	51200.	47579.	37878.	19815.	303793.
		CMS	1452.	1347.	1073.	501.	8002.
		INCHES		1.70	5.42	8.51	10.87
		MM		43.24	137.69	216.09	276.08
		AC-FT		23593.	75130.	117908.	150641.
		THOUS CU M		29101.	92672.	145438.	185813.

		HYDROGRAPH AT STA 4 FOR PLAN 1, RTIO 6							
243.	226.	274.	511.	2447.	4374.	5754.	14728.	44142.	64082.
54864.	36192.	24362.	17363.	13077.	9909.	6773.	6026.	5622.	5246.
4895.	4507.	4261.	3976.	3709.	3461.	3229.	3013.	2811.	2623.
2447.	2283.	2131.	1988.	1855.	1731.	1615.	1507.	1406.	1311.
1224.	1142.	1005.	994.	927.	865.	807.	753.	703.	656.

		PEAK	6-HOUR	24-HOUR	72-HOUR	TOTAL VOLUME	
		CFS	64082.	59473.	47348.	24769.	379741.
		CMS	1815.	1684.	1341.	701.	10753.
		INCHES		2.13	6.76	10.63	13.59
		MM		54.05	172.11	270.11	345.10
		AC-FT		29491.	93913.	147365.	188301.
		THOUS CU M		36370.	115840.	181797.	232266.

McFARLAND-JOHNSON ENGINEERS, INC.

SUB-AREA RUNOFF COMPUTATION

JATKA CREEK INFLOW HYDROGRAPH

ISFAG	ICOMP	ICON	ITAPE	JPLI	JPT	INAME	ISTAGE	IAUTO
4	0	0	0	0	0	1	0	0

1HUG	1HUG	TAREA	SNAP	TRSDA	TRSPC	RATIO	ISNOA	ISAME	LUCAL
1	-1	215.00	0.00	2460.00	0.00	0.000	0	1	0

SPFE	PAS	R6	R12	R24	R48	R72	R96
0.09	22.00	41.00	55.00	63.00	74.00	0.00	0.00

TRSPC COMPUTED BY THE PROGRAM IS 0.925

LOSS DATA

LRQPT	STRKR	DLTRK	RTIOL	ERAIN	SIRKS	RTIOL	STRTL	CNSTL	ALSMX	RTIMP
0	0.00	0.00	1.00	0.00	0.00	1.00	1.00	0.10	0.00	0.00

GIVEN UNIT GRAPH, MUHGU= 12									
100.	400.	1200.	2800.	4200.	4200.	3000.	2100.	1500.	1100.
800.	500.								

UNIT GRAPH TOTALS 21900. CFS OR 0.95 INCHES OVER THE AREA

PERCESSION DATA

STRTQ= -1.00 QRCSEN= -0.10 RTICR= 2.00

0	MDA	HR.MN	PERIOD	RAIN	EXCS	LOSS	END-OF-PERIOD FLOW		MDA	HR.MN	PERIOD	RAIN	EXCS	LOSS	COMP Q
							COMP Q	MDA							
1.01	6.00	1	0.11	0.00	0.11	201.	1.07	12.00	26	0.00	0.00	0.00	0.00	0.00	2529.
1.01	12.00	2	0.50	0.00	0.50	187.	1.07	18.00	27	0.00	0.00	0.00	0.00	0.00	2300.
1.01	18.00	3	1.46	0.03	0.63	237.	1.08	0.00	28	0.00	0.00	0.00	0.00	0.00	2202.
1.02	0.00	4	0.17	0.00	0.17	414.	1.08	6.00	29	0.00	0.00	0.00	0.00	0.00	2055.
1.02	6.00	5	0.05	0.05	0.00	910.	1.08	12.00	30	0.00	0.00	0.00	0.00	0.00	1917.
1.02	12.00	6	2.55	2.25	0.60	2144.	1.08	18.00	31	0.00	0.00	0.00	0.00	0.00	1789.
1.02	18.00	7	8.34	7.74	0.60	4501.	1.09	0.00	32	0.00	0.00	0.00	0.00	0.00	1669.
1.03	0.00	8	0.93	0.38	0.60	8732.	1.09	6.00	33	0.00	0.00	0.00	0.00	0.00	1557.
1.03	6.00	9	0.00	0.00	0.00	17943.	1.09	12.00	34	0.00	0.00	0.00	0.00	0.00	1453.
1.03	12.00	10	0.00	0.00	0.00	33202.	1.09	18.00	35	0.00	0.00	0.00	0.00	0.00	1355.
1.03	18.00	11	0.00	0.00	0.00	44195.	1.10	0.00	36	0.00	0.00	0.00	0.00	0.00	1265.
1.04	0.00	12	0.00	0.00	0.00	41721.	1.10	6.00	37	0.00	0.00	0.00	0.00	0.00	1180.
1.04	6.00	13	0.00	0.00	0.00	30186.	1.10	12.00	38	0.00	0.00	0.00	0.00	0.00	1101.
1.04	12.00	14	0.00	0.00	0.00	21205.	1.10	18.00	39	0.00	0.00	0.00	0.00	0.00	1027.
1.04	18.00	15	0.00	0.00	0.00	14989.	1.11	0.00	40	0.00	0.00	0.00	0.00	0.00	958.
1.05	0.00	16	0.00	0.00	0.00	10973.	1.11	6.00	41	0.00	0.00	0.00	0.00	0.00	894.
1.05	6.00	17	0.00	0.00	0.00	7790.	1.11	12.00	42	0.00	0.00	0.00	0.00	0.00	834.
1.05	12.00	18	0.00	0.00	0.00	4404.	1.11	18.00	43	0.00	0.00	0.00	0.00	0.00	779.
1.05	18.00	19	0.00	0.00	0.00	4109.	1.12	0.00	44	0.00	0.00	0.00	0.00	0.00	726.
1.06	0.00	20	0.00	0.00	0.00	3834.	1.12	6.00	45	0.00	0.00	0.00	0.00	0.00	678.
1.06	6.00	21	0.00	0.00	0.00	3577.	1.12	12.00	46	0.00	0.00	0.00	0.00	0.00	632.
1.06	12.00	22	0.00	0.00	0.00	3338.	1.12	18.00	47	0.00	0.00	0.00	0.00	0.00	590.
1.06	18.00	23	0.00	0.00	0.00	3114.	1.13	0.00	48	0.00	0.00	0.00	0.00	0.00	551.
1.07	0.00	24	0.00	0.00	0.00	2900.	1.13	6.00	49	0.00	0.00	0.00	0.00	0.00	514.

MCFARLAND-JOHNSON ENGINEERS, INC.

40. 0.00 0.00 2711. 1.13 12.00 50 0.00 0.00 0.00 479.

SUM 15.05 11.04 4.01 298623.
(382.)(280.)(102.)(8456.00)

	PEAK	6-HOUR	24-HOUR	72-HOUR	TOTAL VOLUME
CFS	44195.	42950.	35820.	19971.	294262.
CMS	1251.	1216.	1014.	566.	3446.
INCHES		1.80	0.20	10.37	12.91
MM		47.21	157.49	263.17	327.80
AC-FI		21302.	71061.	118835.	147909.
THOUS CU M	4	26275.	67652.	146531.	162443.

	HYDROGRAPH AT STA 4 FOR PLAN 1, RTIO 1			
40.	37.	47.	83.	182. 429. 900. 1740. 3589. 6640.
6839.	8344.	6037.	4241.	2998. 2195. 1559. 681. 822. 767.
715.	608.	623.	581.	542. 505. 472. 440. 411. 383.
358.	334.	311.	291.	271. 253. 230. 220. 205. 192.
179.	167.	156.	145.	136. 120. 118. 110. 103. 96.

	PEAK	6-HOUR	24-HOUR	72-HOUR	TOTAL VOLUME
CFS	8839.	8592.	7105.	3994.	59657.
CMS	250.	243.	203.	113.	1689.
INCHES		0.37	1.24	2.07	2.58
MM		9.44	31.50	52.67	65.50
AC-FI		4260.	14212.	23767.	29562.
THOUS CU M	4	5255.	17530.	29316.	36469.

	HYDROGRAPH AT STA 4 FOR PLAN 1, RTIO 2			
70.	66.	83.	145.	318. 750. 1575. 3050. 6280. 11621.
15468.	14602.	10565.	7422.	5246. 3840. 2729. 1541. 1438. 1342.
1252.	1108.	1090.	1017.	949. 885. 826. 771. 719. 671.
626.	584.	545.	508.	474. 443. 413. 385. 360. 335.
313.	292.	272.	254.	237. 221. 207. 193. 180. 168.

	PEAK	6-HOUR	24-HOUR	72-HOUR	TOTAL VOLUME
CFS	15466.	15035.	12539.	6990.	104399.
CMS	438.	426.	355.	198.	2950.
INCHES		0.65	2.17	3.63	4.52
MM		16.52	55.12	92.18	114.73
AC-FI		7456.	24871.	41592.	51768.
THOUS CU M	4	9190.	30676.	51303.	63855.

	HYDROGRAPH AT STA 4 FOR PLAN 1, RTIO 3			
100.	94.	119.	207.	455. 1072. 2251. 4366. 8971. 16601.
22098.	20861.	15093.	10603.	7495. 5486. 3898. 2202. 2055. 1917.
1789.	1669.	1557.	1453.	1355. 1265. 1160. 1101. 1027. 958.
894.	834.	779.	726.	678. 632. 590. 551. 514. 479.
447.	417.	389.	363.	339. 316. 295. 275. 257. 240.

	PEAK	6-HOUR	24-HOUR	72-HOUR	TOTAL VOLUME
CFS	22098.	21479.	17913.	9985.	149141.
CMS	620.	606.	507.	283.	4223.
INCHES		0.93	3.10	5.18	6.45
MM		23.60	78.74	135.27	163.90

McFARLAND-JOHNSON ENGINEERS, INC.

AC-FT		10651.	35530.	59+10.	73954.
THOUS CU M		13136.	43325.	73291.	91221.

HYDROGRAPH AT STA 4 FOR PLAN 1, RIIO 4					
150.	122.	154.	209.		
28727.	27119.	19521.	13783.		
2325.	2109.	2024.	1889.		
1163.	1085.	1012.	944.		
581.	542.	506.	472.		
PEAK	6-HOUR	24-HOUR	72-HOUR		
CFS	28727.	27923.	23287.	12981.	TOTAL VOLUME
CMS	813.	791.	659.	368.	193664.
INCHES					5490.
MM					8.39
AC-FT					213.07
THOUS CU M					96141.
					116588.

HYDROGRAPH AT STA 4 FOR PLAN 1, RIIO 5					
160.	150.	190.	331.		
34356.	33377.	24149.	16964.		
2602.	2670.	2491.	2324.		
1431.	1335.	1240.	1162.		
715.	608.	923.	581.		
PEAK	6-HOUR	24-HOUR	72-HOUR	TOTAL VOLUME	
CFS	35356.	34367.	28661.	15977.	238626.
CMS	1001.	973.	812.	452.	6757.
INCHES					10.32
MM					262.24
AC-FT					118327.
THOUS CU M					145954.

HYDROGRAPH AT STA 4 FOR PLAN 1, RIIO 6					
201.	187.	237.	414.		
44195.	41721.	30180.	21205.		
3577.	3336.	3114.	2906.		
1789.	1609.	1557.	1453.		
894.	834.	779.	726.		
PEAK	6-HOUR	24-HOUR	72-HOUR	TOTAL VOLUME	
CFS	44195.	42958.	35826.	19971.	298283.
CMS	1251.	1216.	1014.	566.	8446.
INCHES					12.91
MM					327.80
AC-FT					147909.
THOUS CU M					182443.

SUB-AREA RUNOFF COMPUTATION
McFARLAND-JOHNSON ENGINEERS, INC. 

LOCAL UNIT HYDROGRAPH

	1STAO	1CUMP	1ECON	1FPE	1PFT	1NAME	1PAGE	1AUDIO
INDS	1.00	1.00	0.00	0	0	0	0	0
1	1.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00

PRECIP DATA

SPFE	PNS	HR	R12	R24	R48	R72	R96
0.00	22.00	41.00	55.00	63.00	74.00	80.00	80.00

RSPEC COMPUTED BY THE PROGRAM IS 0.925

LINKP	STKPK	OLIKR	RTU1	ERAIN	STRA5	RTU2	STRA5	RTU3	ALSMX	RTIMP
0	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.10	0.00	0.00

400. 2400. 2300. 1200. 700. 700. 700. 200. 100.
 UNIT GRAPH TOTALS 7700. CFS OR 1.01 INCHES OVER THE AREA

STRIJ= -1.50 QRCSEN= -0.10 RTIJK= 2.00

0	HR.MN	PERIOD	RAIN	LOSS	END-OF-PERIOD FLOA	HR.MN	PERIOD	RAIN	EXCS	LOSS	COMP Q
1.01	6.00	1	0.11	0.00	0.11	99.	1.07	12.00	26	0.00	0.00
1.01	12.00	2	0.30	0.00	0.50	93.	1.07	18.00	27	0.00	0.00
1.01	18.00	3	1.40	0.03	0.83	337.	1.08	0.00	28	0.00	0.00
1.02	0.00	4	0.17	0.00	0.17	1580.	1.08	0.00	29	0.00	0.00
1.02	6.00	5	0.93	0.05	0.60	1539.	1.08	12.00	30	0.00	0.00
1.02	12.00	6	2.65	0.00	1.844.	1.08	18.00	31	0.00	0.00	735.
1.02	18.00	7	8.34	7.4	0.60	9112.	1.09	0.00	32	0.00	0.00
1.03	0.00	8	0.36	0.38	0.60	24209.	1.09	6.00	33	0.00	0.00
1.03	6.00	9	0.00	0.00	0.00	21020.	1.09	12.00	34	0.00	0.00
1.03	12.00	10	0.00	0.00	0.00	11803.	1.09	18.00	35	0.00	0.00
1.03	18.00	11	0.00	0.00	0.00	6828.	1.10	0.00	36	0.00	0.00
1.04	0.00	12	0.00	0.00	0.00	3860.	1.10	0.00	37	0.00	0.00
1.04	6.00	13	0.00	0.00	0.00	2387.	1.10	12.00	38	0.00	0.00
1.04	12.00	14	0.00	0.00	0.00	2228.	1.10	18.00	39	0.00	0.00
1.04	18.00	15	0.00	0.00	0.00	2078.	1.11	0.00	40	0.00	0.00
1.05	0.00	16	0.00	0.00	0.00	1939.	1.11	6.00	41	0.00	0.00
1.05	6.00	17	0.00	0.00	0.00	1809.	1.11	12.00	42	0.00	0.00
1.05	12.00	18	0.00	0.00	0.00	1688.	1.11	18.00	43	0.00	0.00
1.05	18.00	19	0.00	0.00	0.00	1575.	1.12	0.00	44	0.00	0.00
1.06	0.00	20	0.00	0.00	0.00	1470.	1.12	6.00	45	0.00	0.00
1.06	6.00	21	0.00	0.00	0.00	1371.	1.12	12.00	46	0.00	0.00
1.06	12.00	22	0.00	0.00	0.00	1279.	1.12	18.00	47	0.00	0.00
1.06	18.00	23	0.00	0.00	0.00	1194.	1.13	0.00	48	0.00	0.00
1.07	0.00	24	0.00	0.00	0.00	1114.	1.13	6.00	49	0.00	0.00
1.07	6.00	25	0.00	0.00	0.00	1039.	1.13	12.00	50	0.00	0.00

	15.05	1.04	4.01	116142.
CFS	(382.) (280.) (102.) (3288.77)	TOTAL VOLUME	11601.	
CFS	24209.	0-HOUR	72-HOUR	
CFS	655.	24-HOUR	740.	
	465.	10431.		
	3285.			

PEAK 24-HOUR 72-HOUR 72-HOUR
 08/1. MC FARLAND-JOHNSON ENGINEERS, INC.

INCHES	3.01	8.01	11.76	15.20
AM	70.30	218.72	295.71	366.04
AC-FT	11377.	32590.	44509.	57521.
INCHES CU M	14034.	40199.	54902.	70951.

HYDROGRAPH AT STA 4 FOR PLAN 1, RI10 1			
20.	19.	07.	317.
1360.	772.	477.	308.
274.	256.	239.	223.
137.	128.	119.	111.
69.	64.	60.	56.
			309.
			362.
			1822.
			4854.
			4324.
			2373.
			330.
			315.
			294.
			169.
			158.
			147.
			84.
			79.
			73.
			42.
			39.
			37.

PEAK	6-HOUR	24-HOUR	72-HOUR	TOTAL VOLUME
CFS	4854.	4589.	3286.	23200.
CMS	137.	130.	93.	657.
INCHES	0.60	1.72	2.35	3.04
AM	15.27	43.74	59.74	77.21
AC-FT	2275.	6516.	8902.	11504.
INCHES CU M	2807.	8040.	10980.	14190.

HYDROGRAPH AT STA 4 FOR PLAN 1, RI10 2			
35.	32.	118.	555.
2390.	1351.	336.	750.
480.	448.	418.	390.
240.	224.	209.	195.
120.	112.	104.	97.
			539.
			640.
			3189.
			8494.
			7567.
			4152.
			591.
			551.
			514.
			295.
			276.
			257.
			148.
			138.
			129.
			69.
			64.

PEAK	6-HOUR	24-HOUR	72-HOUR	TOTAL VOLUME
CFS	6494.	5031.	5751.	40600.
CMS	241.	227.	163.	1150.
INCHES	1.05	3.01	4.12	5.32
AM	26.74	76.55	104.55	135.11
AC-FT	3982.	11406.	15576.	20132.
INCHES CU M	4912.	14070.	19216.	24833.

HYDROGRAPH AT STA 4 FOR PLAN 1, RI10 3			
50.	46.	169.	793.
3414.	1930.	1194.	1114.
660.	640.	597.	557.
343.	320.	298.	278.
171.	160.	149.	139.
			769.
			922.
			4556.
			12134.
			10810.
			5932.
			844.
			788.
			735.
			422.
			394.
			367.
			211.
			197.
			184.
			98.
			92.

PEAK	6-HOUR	24-HOUR	72-HOUR	TOTAL VOLUME
CFS	12134.	11472.	8215.	56000.
CMS	344.	325.	233.	1042.
INCHES	1.50	4.31	5.88	7.60
AM	36.18	109.36	149.36	193.02
AC-FT	5689.	16295.	22455.	28701.
INCHES CU M	7017.	20099.	27451.	35470.

HYDROGRAPH AT STA 4 FOR PLAN 1, RI10 4			
65.	60.	219.	1031.
4458.	2509.	1552.	1000.
			1199.
			5923.
			15775.
			14053.
			7711.
			1097.
			1024.
			955.

McFARLAND-JOHNSON ENGINEERS, INC.

091.	032.	110.	724.	075.	030.	088.	549.	512.	478.
440.	410.	500.	302.	330.	315.	294.	274.	250.	239.
225.	205.	194.	101.	169.	158.	147.	137.	128.	119.

	PEAK	0-HOUR	24-HOUR	72-HOUR	TOTAL VOLUME
CFS	15775.	14914.	10680.	4862.	75401.
CMS	447.	422.	302.	136.	2135.
INCHES		1.95	5.60	7.64	9.88
MM		49.63	142.17	194.16	250.92
AC-FT		7395.	21183.	28931.	37389.
INHUS CU 4		9122.	26129.	35680.	46118.

HYDROGRAPH AT STA 4 FOR PLAN 1, RIO 5									
79.	74.	270.	1209.	1231.	1475.	7290.	19415.	17296.	9490.
5463.	3068.	1910.	1782.	1663.	1551.	1447.	1351.	1260.	1176.
1097.	1023.	955.	691.	631.	770.	724.	675.	630.	588.
548.	512.	477.	440.	416.	388.	362.	338.	315.	294.
274.	256.	239.	223.	208.	194.	181.	169.	158.	147.

	PEAK	0-HOUR	24-HOUR	72-HOUR	TOTAL VOLUME
CFS	19415.	18356.	13144.	5984.	92601.
CMS	550.	520.	372.	169.	2626.
INCHES		2.40	6.89	9.41	12.16
MM		61.09	174.97	238.97	308.83
AC-FT		9102.	26072.	35006.	46017.
INHUS CU 4		11227.	32159.	43921.	56761.

HYDROGRAPH AT STA 4 FOR PLAN 1, RIO 6									
99.	93.	337.	1580.	1539.	1844.	9112.	24269.	21620.	11863.
682d.	3600.	2307.	2229.	2078.	1939.	1809.	1688.	1575.	1470.
1371.	1279.	1194.	1114.	1039.	970.	905.	844.	780.	735.
686.	640.	597.	557.	520.	485.	452.	422.	394.	367.
343.	320.	298.	276.	260.	242.	226.	211.	197.	164.

	PEAK	0-HOUR	24-HOUR	72-HOUR	TOTAL VOLUME
CFS	24269.	22944.	16431.	7480.	116001.
CMS	687.	650.	465.	212.	3285.
INCHES		3.01	8.01	11.76	15.20
MM		76.36	218.72	298.71	386.04
AC-FT		11377.	32590.	44510.	57521.
INHUS CU 4		14034.	40199.	54902.	70951.

SUB-AREA RUNOFF COMPUTATION

BLACK CREEK INFLO* HYDROGRAPH

IS1W0	ICOMP	IECO+	ITAPE	JPLT	JPRT	INARE	IS1AGE	IAU10
0	0	0	0	0	0	1	0	0

HYDROGRAPH DATA

ID1-G	1UHG	TAREA	SNAP	TRSDA	TRSPC	R	ISNOW	ISAME	LOCAL
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McFARLAND-JOHNSON ENGINEERS, INC. 

1 -1 187.00 0.00 2460.00 0.00 0.000 0 1 0

SPFT PAS R12 R24 R48 R72 R96
0.00 22.00 41.00 55.00 63.00 74.00 0.00 0.00
TRSPC COMPUTED AT THE PROGRAM IS 0.925

LHRPT STRK OLRK RTRD ERAIN LOSS DATA STAS RTIUM SIRL CRSTL ALSMX RTIMP
0 0.00 0.00 1.00 0.00 1.00 1.00 0.10 0.00 0.00 0.00

100. 400. 900. 1300. 1700. GIVEN UNIF GRAPH, HNGE= 12 2800. 3100. 2600. 2000.
1400. UNIT GRAPH TOTALS 19500. CFS OR 0.97 INCHES OVER THE AREA

SIRL= -1.00 QRCNE= -0.10 RTIUM= 2.00
RECESSUN DATA

NO. DA	HR.MN	PERIOD	RAIN	LOSS	END-OF-PERIOD FLOW	CMPD Q	HR.DA	HR.MN	PERIOD	RAIN	EXCS	LOSS	CMPD Q	
1.01	6.00	1	0.11	0.00	174.	1.07	12.00	26	0.00	0.00	0.00	0.00	1890.	
1.01	12.00	2	0.50	0.00	163.	1.07	18.00	27	0.00	0.00	0.00	0.00	1769.	
1.01	18.00	3	1.40	0.03	0.83	215.	1.08	0.00	28	0.00	0.00	0.00	0.00	1651.
1.01	0.00	4	0.17	0.00	0.17	393.	1.06	6.00	49	0.00	0.00	0.00	0.00	1540.
1.02	6.00	5	0.65	0.05	0.05	702.	1.08	12.00	30	0.00	0.00	0.00	0.00	1437.
1.02	12.00	6	2.85	2.25	0.00	1184.	1.08	18.00	31	0.00	0.00	0.00	0.00	1341.
1.02	18.00	7	8.34	7.74	0.00	2900.	1.09	0.00	32	0.00	0.00	0.00	0.00	1251.
1.03	0.00	8	0.98	0.38	0.00	8773.	1.09	6.00	33	0.00	0.00	0.00	0.00	1167.
1.03	6.00	9	0.98	0.00	0.00	11982.	1.09	12.00	34	0.00	0.00	0.00	0.00	1089.
1.03	12.00	10	0.03	0.00	0.00	10377.	1.09	18.00	35	0.00	0.00	0.00	0.00	1016.
1.03	18.00	11	0.00	0.00	0.00	20677.	1.10	0.00	36	0.00	0.00	0.00	0.00	948.
1.04	0.00	12	0.00	0.00	0.00	26229.	1.10	6.00	37	0.00	0.00	0.00	0.00	885.
1.04	6.00	13	0.00	0.00	0.00	30591.	1.10	12.00	38	0.00	0.00	0.00	0.00	825.
1.04	12.00	14	0.99	0.00	0.00	31628.	1.10	18.00	39	0.00	0.00	0.00	0.00	770.
1.04	18.00	15	0.00	0.00	0.00	25923.	1.11	0.00	40	0.00	0.00	0.00	0.00	719.
1.05	0.00	16	0.00	0.00	0.00	19712.	1.11	6.00	41	0.00	0.00	0.00	0.00	670.
1.05	6.00	17	0.00	0.00	0.00	13669.	1.11	12.00	42	0.00	0.00	0.00	0.00	626.
1.05	12.00	18	0.00	0.00	0.00	7546.	1.11	18.00	43	0.00	0.00	0.00	0.00	584.
1.05	18.00	19	0.00	0.00	0.00	3981.	1.12	0.00	44	0.00	0.00	0.00	0.00	545.
1.06	0.00	20	0.00	0.00	0.00	2874.	1.12	6.00	45	0.00	0.00	0.00	0.00	508.
1.06	6.00	21	0.00	0.00	0.00	2682.	1.12	12.00	46	0.00	0.00	0.00	0.00	474.
1.06	12.00	22	0.00	0.00	0.00	2502.	1.12	18.00	47	0.00	0.00	0.00	0.00	442.
1.06	18.00	23	0.00	0.00	0.00	2335.	1.13	0.00	48	0.00	0.00	0.00	0.00	413.
1.07	0.00	24	0.00	0.00	0.00	2178.	1.13	6.00	49	0.00	0.00	0.00	0.00	385.
1.07	6.00	25	0.00	0.00	0.00	2033.	1.13	12.00	50	0.00	0.00	0.00	0.00	359.

SUM 15.05 11.04 4.01 257893.
(382.)(280.)(102.)(7301.02)

CFs	PEAK	0-HOUR	24-HOUR	72-HOUR	TOTAL VOLUME
0.90.	31628.	31110.	27937.	17642.	257570.
Inches	1.05.	881.	791.	505.	7294.
in	1.05.	1.05.	5.36	10.65	12.81
AC-FP	1.05.	39.31	141.20	270.52	326.45
FEUDS CU	19028.	5541.1.	106105.	127721.	157541.

HYDROGRAPH AT STA				4 FOR PLAN 1, RIIO 1						
55.	33.	43.	79.	140.	237.	566.	1355.	2396.	3275.	
4135.	5240.	0110.	0320.	5165.	3942.	2734.	1509.	616.	575.	
536.	500.	407.	450.	407.	379.	354.	330.	308.	287.	
208.	250.	233.	218.	203.	170.	177.	105.	154.	144.	
134.	125.	117.	109.	102.	95.	86.	83.	77.	72.	

	PEAK	6-HOUR	24-HOUR	72-HOUR	TOTAL VOLUME
CFS	0326.	0222.	5587.	5508.	51514.
CAS	179.	170.	150.	101.	1459.
INCHES		0.31	1.11	2.13	2.56
MM		7.86	28.24	54.10	65.09
AC-FI		3085.	11083.	21233.	25544.
THOUS CFS 4		3800.	13670.	26190.	31508.

HYDROGRAPH AT STA				4 FOR PLAN 1, RIIO 2						
61.	57.	75.	137.	246.	414.	1015.	2371.	4194.	5732.	
7237.	9160.	10707.	11070.	9073.	6899.	4784.	2641.	1078.	1006.	
939.	870.	617.	762.	711.	664.	619.	578.	539.	503.	
409.	438.	409.	361.	356.	332.	310.	269.	270.	252.	
235.	219.	204.	191.	178.	100.	155.	144.	135.	126.	

	PEAK	6-HOUR	24-HOUR	72-HOUR	TOTAL VOLUME
CFS	11070.	10836.	9778.	6245.	90149.
CAS	313.	309.	277.	177.	2553.
INCHES		0.54	1.95	3.73	4.48
MM		13.76	49.42	94.68	113.91
AC-FI		5599.	19394.	37158.	44702.
THOUS CFS 4		6060.	23923.	45633.	55159.

HYDROGRAPH AT STA				4 FOR PLAN 1, RIIO 3						
67.	81.	107.	196.	351.	592.	1450.	3386.	5991.	8188.	
10339.	13114.	15290.	15814.	12961.	9850.	6834.	3773.	1540.	1437.	
1341.	1251.	1107.	1089.	1016.	948.	685.	625.	770.	719.	
670.	620.	584.	545.	508.	474.	442.	413.	385.	359.	
335.	313.	292.	272.	254.	237.	221.	206.	193.	180.	

	PEAK	6-HOUR	24-HOUR	72-HOUR	TOTAL VOLUME
CFS	15814.	15555.	13969.	8921.	128785.
CAS	446.	440.	390.	253.	3647.
INCHES		0.77	2.76	5.33	6.41
MM		19.65	70.60	135.26	162.72
AC-FI		7713.	27706.	53082.	63860.
THOUS CFS 4		9514.	34175.	65476.	78771.

HYDROGRAPH AT STA				4 FOR PLAN 1, RIIO 4						
113.	106.	140.	255.	450.	770.	1865.	4402.	7788.	10645.	
13440.	17049.	19804.	2055d.	16850.	12813.	8865.	4905.	2002.	1868.	
1743.	1627.	1516.	1410.	1321.	1233.	1150.	1073.	1001.	934.	
872.	813.	759.	708.	661.	616.	575.	537.	501.	467.	
436.	407.	379.	354.	330.	308.	266.	268.	250.	234.	

	PEAK	6-HOUR	24-HOUR	72-HOUR	TOTAL VOLUME
CFS	2055e.	20221.	19159.	11597.	167420.
CAS	582.	573.	514.		4741.

McFARLAND-JOHNSON ENGINEERS, INC.

	14ches	1.01	3.61	6.92	8.33
in	25.55	91.78	175.84	211.54	
AC-ft	10027.	36010.	69007.	83010.	
THOUS Cu M	12308.	44420.	95119.	102402.	

HYDROGRAPH AT STA 4 FOR PLAN 1, RT10 5					
140.	130.	172.	514.	562.	947.
16542.	20003.	24473.	25303.	20736.	15770.
2140.	2002.	1800.	1743.	1626.	1517.
1073.	1001.	934.	871.	813.	759.
530.	500.	407.	430.	407.	379.
					354.
					330.
					306.
					287.

	PEAK	6-HOUR	24-HOUR	72-HOUR	TOTAL VOLUME
CFS	25303.	24683.	22350.	14273.	206056.
CMS	716.	705.	633.	404.	5635.
INCHES		1.24	4.45	8.52	10.25
in		31.45	112.96	216.41	260.36
AC-Ft		12341.	44330.	84932.	102176.
THOUS Cu M		15223.	54680.	104702.	126033.

HYDROGRAPH AT STA 4 FOR PLAN 1, RT10 6					
174.	103.	215.	393.	702.	1184.
20677.	26229.	30591.	31026.	25923.	19712.
2682.	2502.	2335.	2176.	2033.	1890.
1341.	1251.	1167.	1089.	1016.	946.
570.	620.	584.	545.	508.	474.
					442.
					413.
					395.
					359.

	PEAK	6-HOUR	24-HOUR	72-HOUR	TOTAL VOLUME
CFS	31626.	31110.	27937.	17842.	257570.
CMS	890.	881.	791.	505.	7294.
INCHES		1.55	5.56	10.65	12.81
in		39.31	141.20	270.52	325.45
AC-Ft		15426.	55413.	106165.	127721.
THOUS Cu M		19028.	68350.	130952.	157541.

COMBINE HYDROGRAPHS

COMBINE FLOWS AT CONFLUENCE OF BLACK CREEK

1STA3	1COMP	IECON	1TAPE	JPLT	JFRT	INAME	1STAGE	IAUTO
4	5	0	0	0	0	1	0	0

S34 OF 5 HYDROGRAPHS AT				4 PLAN 1 RT10 1					
254.	244.	319.	833.	1959.	3065.	6219.	10590.	33188.	43227.
43565.	38353.	31548.	25228.	19024.	14385.	10394.	7298.	5620.	5046.
4614.	4262.	3950.	3684.	3434.	3202.	2987.	2787.	2600.	2426.
2264.	2112.	1971.	1839.	1715.	1601.	1493.	1393.	1390.	1213.
1132.	1050.	965.	919.	858.	800.	747.	697.	650.	607.

PEAK	6-HOUR	24-HOUR	72-HOUR	TOTAL VOLUME
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McFARLAND-JOHNSON ENGINEERS, INC.

CFS	45505.	43396.	39375.	24050.	365239.
CMS	1254.	1229.	1115.	561.	10342.
INCHES		0.17	0.01	1.12	1.42
"		4.27	15.51	28.44	35.97
AC-FT		21519.	78105.	143168.	161110.
INCHES CU	4	26543.	96342.	170595.	223395.

SUM OF 5 HYDROGRAPHS AT				4	PLAN 1	R110 2			
444.	427.	559.	1450.	3429.	5363.	10883.	29032.	56079.	75647.
76239.	67116.	55209.	44149.	33292.	25180.	10190.	12771.	9830.	6831.
8075.	7459.	6926.	6446.	6009.	5094.	5228.	4877.	4550.	4246.
3901.	3050.	3440.	3218.	3002.	2801.	2613.	2438.	2275.	2123.
1901.	1848.	1724.	1609.	1501.	1401.	1307.	1219.	1138.	1061.

	PEAK	6-HOUR	24-HOUR	72-HOUR	TOTAL VOLUME
CFS	76239.	75943.	68912.	42105.	639168.
CMS	2159.	2150.	1951.	1192.	18099.
INCHES		0.29	1.07	1.90	2.48
"		7.48	27.15	49.70	62.95
AC-FT		37658.	130085.	250544.	316943.
INCHES CU	4	46450.	163598.	309041.	390943.

SUM OF 5 HYDROGRAPHS AT				4	PLAN 1	R110 3			
634.	610.	799.	2082.	4698.	7552.	15547.	41475.	52970.	108067.
106913.	95582.	76009.	63069.	47560.	35971.	25965.	18244.	14051.	12615.
11530.	11055.	9594.	9211.	8739.	8807.	9673.	10010.	11204.	11342.
11130.	10700.	10156.	9567.	8973.	8390.	7846.	7326.	6838.	6381.
5955.	5556.	5154.	4837.	4513.	4211.	3929.	3666.	3420.	3191.

	PEAK	6-HOUR	24-HOUR	72-HOUR	TOTAL VOLUME
CFS	106913.	108490.	98445.	60150.	997510.
CMS	3064.	3072.	2768.	1703.	28246.
INCHES		0.42	1.53	2.80	3.87
"		10.69	36.78	71.09	98.25
AC-FT		53797.	195204.	357920.	494633.
INCHES CU	4	66357.	240854.	441468.	610121.

SUM OF 5 HYDROGRAPHS AT				4	PLAN 1	R110 4			
824.	793.	1138.	2707.	6368.	9960.	20211.	53917.	107661.	140487.
141560.	124647.	102530.	83020.	67000.	56610.	51390.	44131.	38891.	35801.
32727.	29969.	27575.	25490.	23647.	21989.	20477.	19086.	17797.	16601.
15460.	14448.	13480.	12577.	11735.	10949.	10216.	9531.	8693.	8298.
7742.	7224.	5740.	6288.	5867.	5474.	5108.	4766.	4447.	4149.

	PEAK	6-HOUR	24-HOUR	72-HOUR	TOTAL VOLUME
CFS	141586.	141037.	127979.	83752.	1498071.
CMS	4009.	3994.	3624.	2372.	42421.
INCHES		0.55	1.98	3.90	5.81
"		13.89	50.42	98.99	147.55
AC-FT		69936.	253643.	498358.	742845.
INCHES CU	4	86264.	313110.	614715.	910286.

SUM OF 5 HYDROGRAPHS AT						4 PLAN 1	RIIL 5		
1015.	970.	1270.	3331.	7537.	12259.	24675.	66300.	132752.	172907.
17400.	154509.	152394.	127517.	119034.	103954.	65365.	67636.	55532.	48200.
42430.	37951.	34483.	31039.	29253.	27125.	25232.	23504.	21911.	20436.
19062.	17783.	19591.	15460.	14443.	13470.	12573.	11731.	10945.	19212.
9529.	8890.	9295.	7740.	7221.	6732.	6287.	5665.	5473.	5106.

	PEAK	6-HOUR	24-HOUR	72-HOUR	TOTAL VOLUME
CFS	174260.	173584.	153952.	115452.	1996632.
CFS	4934.	4915.	4501.	3209.	50595.
Inches		0.67	2.47	5.37	7.75
in		17.10	62.62	130.45	196.85
AC-FI		8074.	315278.	686967.	991057.
INCHES CU M	4	195171.	368889.	647355.	1222451.

SUM OF 5 HYDROGRAPHS AT						4 PLAN 1	RIIL 6		
1206.	1220.	1597.	4104.	9797.	15324.	31093.	62949.	105940.	216134.
217825.	203636.	205605.	205274.	183953.	156652.	116646.	88650.	70555.	60394.
52912.	47320.	42969.	39477.	36499.	33603.	31528.	29374.	27386.	25542.
23620.	22228.	23739.	19350.	19053.	16044.	15716.	14654.	13682.	12766.
11911.	11113.	10505.	9675.	9027.	6422.	7650.	7332.	6641.	6383.

	PEAK	6-HOUR	24-HOUR	72-HOUR	TOTAL VOLUME
CFS	217625.	215979.	209933.	158336.	2000040.
CFS	6195.	6144.	5945.	4484.	75494.
Inches		0.84	3.26	7.37	10.34
in		21.37	82.71	157.14	262.58
AC-FI		107593.	416396.	942163.	1322096.
INCHES CU M	4	132714.	513617.	1102141.	1030079.

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HYDROGRAPH ROUTING

ROUTE COMBINE FLOWS TO COURT STREET DAM OUTLET USING MUSKINGUM METHOD

ISIAO	ICOMP	IECON	ITAPE	JPLI	JPHI	IAME	ISTAGE	IAUD
5	1	0	0	0	0	1	0	0
ROUTING DATA								
JLOSS	CLLOSS	Avg	IRES	ISAME	IOPF	IFHP	LSTR	
0.0	0.000	0.00	0	1	6	0	0	
451PS	NSIDL	LAG	AMSKA	X	1SK	SIGRA	ISPRAT	
1	-0	0	6.930	0.010	0.000	0.	0	

STATION 5, PLAN 1, RIIL 1

OUTFLOWS

254.	251.	269.	452.	1019.	1920.	3554.	3258.	16201.	30327.
36277.	31940.	36954.	31786.	25952.	20359.	15539.	11488.	8480.	6554.
5506.	4860.	4400.	4052.	3754.	3490.	3251.	3031.	2627.	2637.

McFARLAND-JOHNSON ENGINEERS, INC.

1230.	1146.	1071.	999.	932.	670.	812.	757.	707.	659.
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	PEAK	6-HOUR	24-HOUR	72-HOUR	TOTAL VOLUME
CFS	39945.	39111.	36556.	25728.	364771.
CMS	1131.	1108.	1035.	672.	10329.
INCHES		0.15	0.57	1.10	1.41
MM		3.85	14.10	26.04	35.93
AC-FI		19394.	72512.	141190.	180678.
THOUS CU M		23922.	89442.	174155.	223110.

STATION 5, PLAN 1, RIID 2

	OUTFLOW								
444.	439.	471.	792.	1783.	3359.	6219.	14451.	31956.	53073.
00904.	09905.	04009.	55620.	45415.	35628.	27193.	20104.	14770.	11469.
9039.	8504.	7710.	7091.	6569.	6108.	5690.	5304.	4947.	4615.
4306.	4017.	3748.	3497.	3263.	3044.	2841.	2650.	2473.	2307.
2153.	2009.	1874.	1749.	1631.	1522.	1420.	1325.	1236.	1154.

	PEAK	6-HOUR	24-HOUR	72-HOUR	TOTAL VOLUME
CFS	69905.	68445.	63977.	41524.	638350.
CMS	1979.	1938.	1812.	1176.	18076.
INCHES		0.27	0.99	1.93	2.48
MM		6.74	25.20	49.08	62.87
AC-FI		33939.	126890.	247082.	316537.
THOUS CU M		41864.	156524.	304772.	390443.

STATION 5, PLAN 1, RIID 3

	OUTFLOW								
034.	627.	673.	1131.	2547.	4799.	8684.	20044.	45652.	75818.
95692.	99864.	92365.	79465.	64879.	50897.	38847.	28720.	21100.	16384.
1311.	12449.	11014.	10130.	9430.	9048.	9177.	9700.	10456.	10952.
1111.	11001.	10050.	10177.	9629.	9059.	8492.	7944.	7423.	6931.
6470.	6038.	5634.	5257.	4905.	4577.	4271.	3985.	3718.	3469.

	PEAK	6-HOUR	24-HOUR	72-HOUR	TOTAL VOLUME
CFS	99864.	97778.	91396.	59319.	994239.
CMS	2820.	2769.	2588.	1680.	28154.
INCHES		0.38	1.42	2.76	3.86
MM		9.63	36.01	70.11	97.92
AC-FI		48485.	181280.	352975.	493011.
THOUS CU M		59805.	223606.	435388.	608120.

STATION 5, PLAN 1, RIID 4

	OUTFLOW								
824.	815.	875.	1470.	3311.	6239.	11550.	26838.	59348.	98564.
124400.	129823.	120100.	103611.	66321.	72073.	61738.	53284.	46157.	40818.
30851.	33522.	30649.	28159.	25987.	24070.	22354.	20798.	19373.	18059.
16840.	15708.	14054.	13671.	12750.	11901.	11104.	10360.	9666.	9019.
6415.	7651.	7326.	6835.	6377.	5950.	5552.	5180.	4833.	4509.

PEAK 6-HOUR 24-HOUR 72-HOUR TOTAL VOLUME
McFARLAND-JOHNSON ENGINEERS, INC. 

	CFS	129823.	127111.	118852.	82437.	1493819.
CFS	3676.	3599.	3366.	2334.	42300.	
INCHES		0.49	1.84	3.84	5.79	
MM		12.52	46.82	97.43	147.13	
AC-FT		63030.	235740.	490535.	740737.	
THOUS CU M		77741.	290781.	605066.	913685.	

STATION 5, PLAN 1, RT10 5

OUTFLOW									
1015.	1003.	1010.	1809.	4075.	7678.	14215.	33031.	73043.	121309.
153107.	160126.	151046.	139181.	129265.	118247.	104031.	87470.	71867.	59748.
51009.	44468.	39481.	35595.	32473.	29875.	27639.	25661.	23875.	22241.
20734.	19336.	18037.	16827.	15699.	14647.	13666.	12751.	11897.	11100.
10357.	9063.	9016.	8412.	7849.	7323.	6833.	6375.	5948.	5550.
PEAK 6-HOUR 24-HOUR 72-HOUR TOTAL VOLUME									
CFS	160126.	156617.	148631.	113119.		1993399.			
CMS	4534.	4435.	4209.	3203.		56447.			
INCHES		0.61	2.31	5.26		7.73			
MM		15.43	58.56	133.69		196.33			
AC-FT		77661.	294305.	673103.		988462.			
THOUS CU M		95794.	363637.	830260.		1219250.			

STATION 5, PLAN 1, RT10 6

OUTFLOW									
1200.	1254.	1346.	2262.	5093.	9598.	17769.	41289.	91395.	151636.
191384.	203316.	204236.	205943.	200134.	180292.	152169.	122246.	96452.	77668.
64933.	55957.	49414.	44461.	40543.	37305.	34523.	32060.	29635.	27796.
25915.	24169.	22546.	21033.	19624.	18309.	17082.	15938.	14871.	13875.
12940.	12079.	11270.	10515.	9811.	9154.	8541.	7969.	7435.	6938.
PEAK 6-HOUR 24-HOUR 72-HOUR TOTAL VOLUME									
CFS	205943.	205090.	202314.	155308.		2659505.			
CMS	5632.	5807.	5729.	4398.		75309.			
INCHES		0.80	3.14	7.23		10.31			
MM		20.20	79.70	183.56		261.94			
AC-FT		10.697.	401283.	924147.		1318763.			
THOUS CU M		125442.	494975.	1139918.		1626670.			

SUB-AREA RUNOFF COMPUTATION

LOCAL INFLOW HYDROGRAPH AT OUTLET OF COURT STREET DAM

ISTAO	ICOMP	IECON	ITAPE	JPLF	JPRT	INAME	ISTAGE	IAUTO
5	0	0	0	0	0	1	0	0

HYDROGRAPH DATA									
INHDS	IUHG	TAREA	SNAP	TRSDA	TRSPC	KAI10	ISNOW	ISAME	LOCAL
1	-1	61.00	0.00	2460.00	0.00	0.00	0	1	0

McFARLAND-JOHNSON ENGINEERS, INC.

PreCIP DATA	R ²⁴	R ⁷²	R ⁹⁶
R ¹²	0.300	74.00	0.00
R ²⁴	0.300	74.00	0.00
R ⁷²	0.00	0.00	0.00
R ⁹⁶	0.00	0.00	0.00

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SPRTE = -2.00 RECESSSION DATA
URCSNE = -0.10 RTRK = 2.00

0	HR.MN	PERIOD	RAIN	EXCS	LOSS	EN-OF-PERIOD COMP Q	FLW ^W MJ.DA	HR.MN	PERIOD	RAIN	EXCS	LOSS	COMP Q
11.01	6.00	1	0.11	0.00	0.11	114.	1.07	12.00	2.6	0.00	0.00	0.00	927.
11.01	12.00	2	0.50	0.00	0.50	106.	1.07	18.00	27	0.00	0.00	0.00	865.
11.01	18.00	3	1.48	0.03	0.83	1040.	1.08	0.00	28	0.00	0.00	0.00	807.
11.02	0.00	4	0.17	0.00	0.17	1849.	1.08	6.00	29	0.00	0.00	0.00	753.
11.02	6.00	5	0.05	0.05	0.60	853.	1.08	12.00	30	0.00	0.00	0.00	703.
11.02	12.00	6	2.85	2.25	0.60	3971.	1.08	18.00	31	0.00	0.00	0.00	656.
11.02	18.00	7	8.34	7.74	0.60	18285.	1.09	0.00	32	0.00	0.00	0.00	612.
11.03	0.00	8	0.98	0.38	0.00	24934.	1.09	6.00	33	0.00	0.00	0.00	571.
11.03	6.00	9	0.00	0.00	0.00	1106b.	1.09	12.00	34	0.00	0.00	0.00	533.
11.03	12.00	10	0.00	0.00	0.00	6091.	1.09	18.00	35	0.00	0.00	0.00	497.
11.03	18.00	11	0.00	0.00	0.00	3833.	1.09	0.00	36	0.00	0.00	0.00	464.
11.04	0.00	12	0.00	0.00	0.00	2447.	1.10	6.00	37	0.00	0.00	0.00	433.
11.04	6.00	13	0.00	0.00	0.00	2283.	1.10	12.00	38	0.00	0.00	0.00	404.
11.04	12.00	14	0.00	0.00	0.00	2130.	1.10	18.00	39	0.00	0.00	0.00	377.
11.04	18.00	15	0.00	0.00	0.00	1988.	1.11	0.00	40	0.00	0.00	0.00	351.
11.05	0.00	16	0.00	0.00	0.00	1855.	1.11	6.00	41	0.00	0.00	0.00	328.
11.05	6.00	17	0.00	0.00	0.00	1730.	1.11	12.00	42	0.00	0.00	0.00	306.
11.05	12.00	18	0.00	0.00	0.00	1615.	1.11	18.00	43	0.00	0.00	0.00	285.
11.05	18.00	19	0.00	0.00	0.00	150b.	1.12	0.00	44	0.00	0.00	0.00	266.
11.06	0.00	20	0.00	0.00	0.00	140b.	1.12	6.00	45	0.00	0.00	0.00	248.
11.06	6.00	21	0.00	0.00	0.00	1311.	1.12	12.00	46	0.00	0.00	0.00	232.
11.06	12.00	22	0.00	0.00	0.00	1224.	1.12	18.00	47	0.00	0.00	0.00	216.
11.06	18.00	23	0.00	0.00	0.00	1142.	1.13	0.00	48	0.00	0.00	0.00	202.
11.07	0.00	24	0.00	0.00	0.00	1065.	1.13	6.00	49	0.00	0.00	0.00	188.
11.07	6.00	25	0.00	0.00	0.00	994.	1.13	12.00	50	0.00	0.00	0.00	176.

PEAK	6-HOUR	24-HOUR	72-HOUR	TOTAL VOLUME
CFS	24934.	21610.	14829.	10093.
CMS	706.	612.	420.	3004.
INCHES		3.30	9.05	12.23
MM		83.70	229.75	310.55
AC-FT		10716.	29412.	39750.
AC-FT		32715	36290	40000

HYDROGRAPH OF SIA 171. 5 FOR SIAN 1. KRIU 1
20h. 37°. 371. 794.
McFARLAND-JOHNSON ENGINEERS, INC.
3657.

767.	469.	457.	420.	398.	31.	340.	323.	301.	281.
262.	245.	220.	213.	199.	165.	173.	161.	151.	141.
131.	122.	114.	107.	99.	93.	67.	81.	75.	70.
66.	61.	57.	53.	50.	40.	43.	40.	38.	35.

	PEAK	6-HOUR	24-HOUR	72-HOUR	TOTAL VOLUME
CFS	4987.	4322.	2966.	1336.	21219.
CMS	141.	122.	84.	3d.	601.
INCHES		0.66	1.81	2.45	3.24
MM		16.74	45.95	62.11	82.19
AC-FI		2143.	5882.	7951.	10522.
THOUS CU M		2644.	7256.	9808.	12978.

	HYDROGRAPH AT STA			5 FOR PLAN 1, RT10 2					
40.	37.	304.	647.	398.	1390.	6400.	8727.	3873.	2132.
1342.	857.	799.	746.	696.	649.	606.	565.	527.	492.
459.	428.	400.	373.	348.	325.	303.	283.	264.	246.
230.	214.	200.	186.	174.	162.	151.	141.	132.	123.
115.	107.	100.	93.	87.	81.	76.	71.	66.	61.

	PEAK	6-HOUR	24-HOUR	72-HOUR	TOTAL VOLUME
CFS	8127.	7563.	5190.	2338.	37133.
CMS	247.	214.	147.	66.	1051.
INCHES		1.15	3.17	4.28	5.00
MM		29.30	80.41	108.69	143.83
AC-FI		3750.	10294.	13915.	16413.
THOUS CU M		4626.	12698.	17163.	22712.

	HYDROGRAPH AT STA			5 FOR PLAN 1, RT10 3					
57.	53.	520.	925.	426.	1986.	9143.	12467.	5532.	3045.
1917.	1224.	1142.	1065.	994.	927.	865.	807.	753.	703.
656.	612.	571.	533.	497.	464.	433.	404.	377.	351.
328.	306.	285.	266.	248.	232.	216.	202.	188.	176.
164.	153.	143.	133.	124.	116.	108.	101.	94.	88.

	PEAK	6-HOUR	24-HOUR	72-HOUR	TOTAL VOLUME
CFS	12467.	10805.	7414.	3341.	53047.
CMS	353.	306.	210.	95.	1502.
INCHES		1.65	4.52	6.11	8.09
MM		41.85	114.88	155.28	205.47
AC-FI		5358.	14706.	19878.	26304.
THOUS CU M		6609.	18140.	24519.	32446.

	HYDROGRAPH AT STA			5 FOR PLAN 1, RT10 4					
74.	69.	676.	1202.	554.	2581.	11685.	16207.	7192.	3959.
2492.	1591.	1484.	1385.	1292.	1200.	1125.	1049.	979.	914.
852.	795.	742.	692.	646.	603.	562.	525.	490.	457.
426.	398.	371.	346.	323.	301.	281.	262.	245.	228.
213.	199.	186.	173.	162.	151.	141.	131.	122.	114.

	PEAK	6-HOUR	24-HOUR	72-HOUR	TOTAL VOLUME
CFS	16207.	14046.	9639.	4343.	68960.
CMS	459.	398.	273.	123.	1953.
INCHES		2.14	5.88	7.95	10.52
MM		54.41	149.34	200.61	267.11

AC-FI		0905.	19118.	25041.	34195.
THJUS CU M		0591.	23582.	31875.	42179.

		HYDROGRAPH AT STA		5 FOR PLAN 1, RT10 5					
91.	85.	832.	1479.	682.	3177.	14626.	19947.	8852.	4873.
3067.	1958.	1847.	1704.	1590.	1484.	1384.	1292.	1205.	1124.
1049.	979.	913.	652.	795.	742.	692.	646.	601.	562.
525.	489.	457.	426.	398.	371.	346.	323.	301.	281.
262.	245.	228.	213.	199.	185.	173.	161.	151.	141.

		PEAK	6-HOUR	24-HOUR	72-HOUR	TOTAL VOLUME
CFS	19947.	17286.	11863.	5345.	84874.	
CMS	500.	490.	336.	151.	2403.	
I.CHEs	.	2.04	7.24	9.78	12.94	
MM	.	66.96	163.80	248.44	328.75	
AC-FI	8572.	23530.	31805.	42086.	51913.	
THJUS CU M	10574.	29024.	39231.			

		HYDROGRAPH AT STA		5 FOR PLAN 1, RT10 6					
114.	100.	1040.	1649.	853.	3971.	18285.	24934.	11065.	6091.
5633.	2447.	2263.	2130.	1988.	1855.	1730.	1615.	1506.	1406.
1511.	1224.	1142.	1065.	994.	927.	865.	807.	753.	703.
656.	612.	571.	533.	497.	464.	433.	404.	377.	351.
328.	306.	285.	266.	248.	232.	216.	202.	188.	176.

		PEAK	6-HOUR	24-HOUR	72-HOUR	TOTAL VOLUME
CFS	24934.	21610.	14829.	6681.	106093.	
CMS	700.	612.	420.	189.	3004.	
I.CHEs	.	3.30	9.05	12.23	16.18	
MM	.	83.70	229.75	310.55	410.94	
AC-FI	10716.	29412.	39756.	52608.	64891.	
THJUS CU M	13216.	36280.	49038.			

***** * ***** * ***** * ***** * ***** * ***** * *****

COMBINE HYDROGRAPHS

TOTAL OUTFLOW AT COURT STREET DAM

1STAU	1COMP	IECON	ITAPE	JPFT	JPRT	I NAME	1STAGE	IAUTO
5	2	0	0	0	0	1	0	0

		SUM OF 2 HYDROGRAPHS AT		5 PLAN 1 RT10 1					
276.	272.	477.	822.	1189.	2714.	7211.	13245.	20474.	31545.
39043.	40435.	37411.	32212.	26349.	20730.	15865.	11811.	8741.	6835.
5770.	5104.	4634.	4265.	3953.	3676.	3424.	3193.	2978.	2778.
2592.	2416.	2256.	2105.	1964.	1832.	1710.	1595.	1488.	1389.
1296.	1209.	1128.	1052.	982.	916.	855.	798.	744.	694.

		PEAK	6-HOUR	24-HOUR	72-HOUR	TOTAL VOLUME
CFS	40435.	39739.	37192.	24760.	385990.	
CMS	1145.	1125.	1053.		10930.	

MFARLAND-JOHNSON ENGINEERS, INC.

	INCHES	0.15	0.50	1.12	1.46
	14	3.82	14.29	28.54	37.07
AC-FI		19705.	73769.	147330.	191400.
THOUS CU M		24306.	90993.	181729.	236088.

SUM OF 2 HYDROGRAPHS AT				5 PLAN 1	RT10 2				
484.	476.	835.	1439.	2081.	4749.	12619.	23178.	35829.	55205.
68520.	70701.	65408.	56371.	40111.	36277.	27799.	20669.	15297.	11901.
10098.	6933.	8110.	7464.	0917.	6433.	5993.	5587.	5211.	4861.
4535.	4231.	3948.	3664.	3437.	3207.	2992.	2792.	2605.	2430.
2268.	2116.	1974.	1842.	1718.	1603.	1496.	1396.	1302.	1215.

	PEAK	6-HOUR	24-HOUR	72-HOUR	TOTAL VOLUME
CFS	70701.	69544.	65086.	43329.	675482.
CMS	2004.	1969.	1843.	1227.	19128.
INCHES		0.26	0.98	1.97	2.55
MM		6.68	25.01	49.94	64.88
AC-FI		34484.	129096.	257628.	334950.
THOUS CU M		42536.	159238.	318026.	413154.

SUM OF 2 HYDROGRAPHS AT				5 PLAN 1	RT10 3				
691.	660.	1193.	2055.	2973.	6784.	16027.	33111.	51184.	78864.
97009.	101087.	93520.	80530.	65873.	51824.	39712.	29528.	21853.	17087.
14420.	12761.	11585.	10662.	9927.	9511.	9610.	10163.	10833.	11304.
11454.	11307.	10941.	10443.	9876.	9291.	8708.	8146.	7611.	7107.
6034.	6191.	5777.	5391.	5030.	4693.	4379.	4085.	3812.	3557.

	PEAK	6-HOUR	24-HOUR	72-HOUR	TOTAL VOLUME
CFS	101087.	99348.	92980.	61899.	1047280.
CMS	2862.	2813.	2633.	1753.	29650.
INCHES		0.38	1.41	2.81	3.96
MM		9.54	35.72	71.34	100.59
AC-FI		49263.	184423.	368325.	519315.
THOUS CU M		60766.	227482.	454322.	640506.

SUM OF 2 HYDROGRAPHS AT				5 PLAN 1	RT10 4				
898.	884.	1551.	2672.	3865.	8820.	23435.	43045.	66540.	102523.
126691.	131414.	121584.	104996.	87613.	73279.	62863.	54333.	47137.	41731.
37704.	34318.	31391.	28651.	26633.	24673.	22917.	21323.	19663.	18516.
17267.	16106.	15025.	14017.	13078.	12202.	11385.	10622.	9911.	9247.
8626.	8050.	7511.	7008.	6539.	6101.	5692.	5311.	4955.	4624.

	PEAK	6-HOUR	24-HOUR	72-HOUR	TOTAL VOLUME
CFS	131414.	129152.	120912.	85130.	1562779.
CMS	3721.	3657.	3424.	2411.	44253.
INCHES		0.49	1.83	3.86	5.91
MM		12.40	46.45	98.12	150.10
AC-FI		64043.	239826.	506558.	774932.
THOUS CU M		78995.	295620.	624830.	955854.



SUM OF 2 HYDROGRAPHS AT						5 PLAN 1 RTID 5			
1100.	1069.	1909.	3209.	4757.	10455.	28843.	52976.	81093.	126182.
15014.	162084.	152073.	140885.	130850.	119730.	105415.	88762.	73072.	60673.
52058.	45447.	40395.	30447.	33208.	30617.	28331.	26306.	24417.	22803.
21250.	19020.	18494.	17253.	16097.	15018.	14012.	13074.	12195.	11381.
10619.	9903.	9244.	8625.	8048.	7509.	7006.	6537.	6097.	5691.

	PEAK	6-HOUR	24-HOUR	72-HOUR	TOTAL VOLUME
CFS	162084.	159129.	151166.	116238.	2074273.
CMS	4590.	4506.	4281.	3291.	58850.
INCHES		0.60	2.29	5.27	7.66
MM		15.28	58.08	133.97	199.61
AC-FI		78907.	299633.	691663.	1030549.
THOUS CU M		97330.	369839.	853153.	1271103.

SUM OF 2 HYDROGRAPHS AT						5 PLAN 1 RTID 6			
1382.	1360.	2380.	4111.	5946.	13509.	36054.	66223.	102364.	157727.
195217.	205763.	200519.	208074.	202122.	162247.	153920.	123861.	97930.	79073.
66245.	57180.	50556.	45526.	41537.	36232.	35388.	32867.	30582.	28499.
20570.	24781.	23116.	21566.	20121.	18773.	17515.	16342.	15245.	14227.
13274.	12385.	11555.	10782.	10060.	9386.	8757.	8171.	7621.	7113.

	PEAK	6-HOUR	24-HOUR	72-HOUR	TOTAL VOLUME
CFS	208074.	207297.	204757.	159034.	2765598.
CMS	5892.	5870.	5798.	4503.	78313.
INCHES		0.78	3.10	7.22	10.46
MM		19.91	78.67	183.30	265.63
AC-FI		102792.	400129.	946317.	1371371.
THOUS CU M		126792.	500952.	1167204.	1691561.



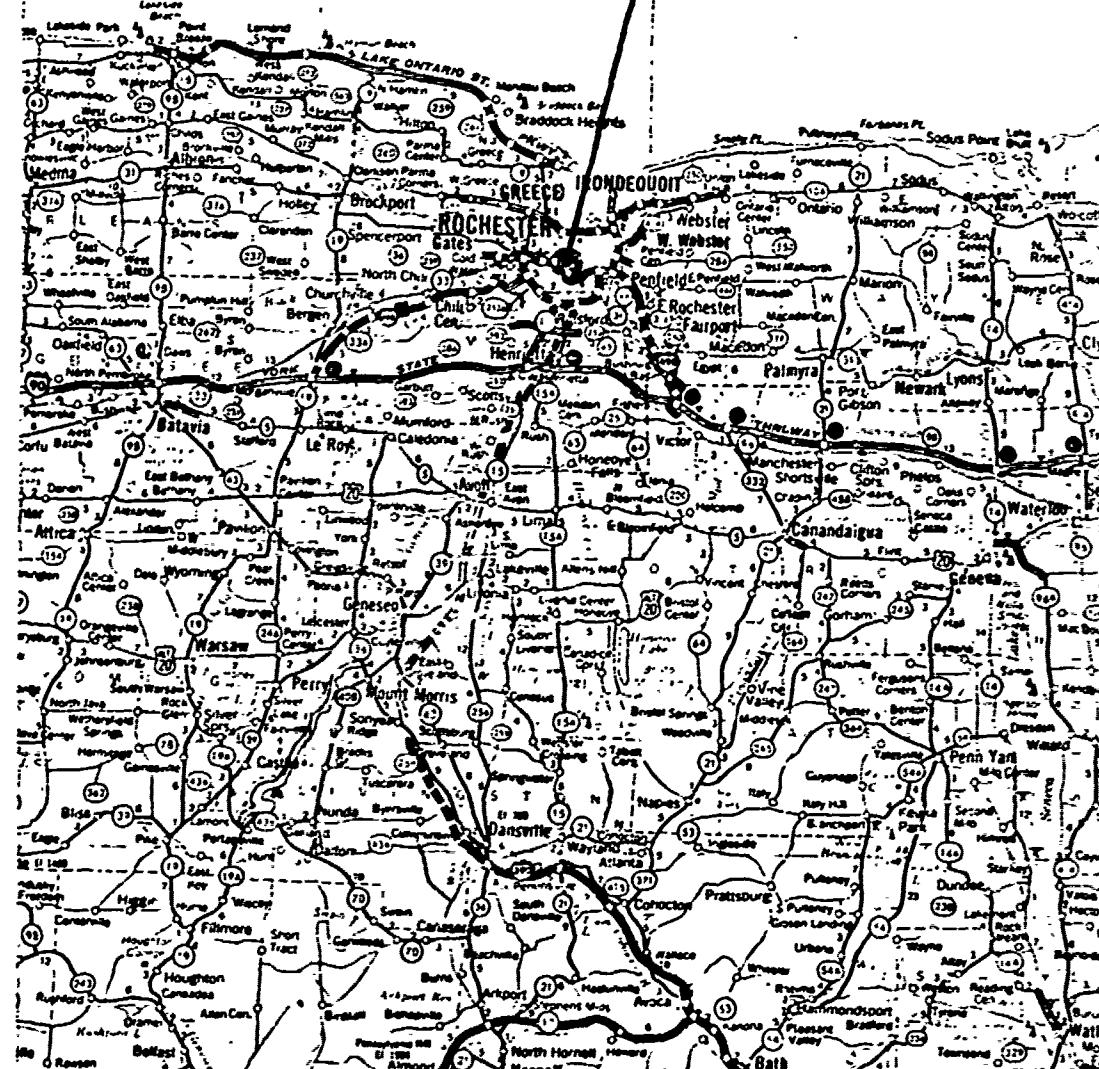
PEAK FLOW AND STORAGE (END OF PERIOD) SUMMARY FOR MULTIPLE PLAN-RATIO ECONOMIC COMPUTATIONS
 FLOWS IN CUBIC FEET PER SECOND (CUBIC METERS PER SECOND)
 AREA IN SQUARE MILES (SQUARE KILOMETERS)

OPERATION	STATION	AREA	PLAN	RATIOS APPLIED TO FLOWS					
				RATIO 1 0.20	RATIO 2 0.35	RATIO 3 0.50	RATIO 4 0.65	RATIO 5 0.80	RATIO 6 1.00
HYDROGRAPH AT	1 1075.00 (2784.24)		1 48796. (1301.15)	85393. (2418.06)	121990. (3454.37)	158587. (4498.68)	195184. (5520.99)	243980. (6908.74)	
ROUTED TO	2 1075.00 (2784.24)		1 0. (0.00)	0. (0.00)	5962. (168.82)	25274. (715.69)	71366. (2020.87)	156290. (4425.63)	
HYDROGRAPH AT	2 335.00 (867.65)		1 16399. (404.38)	28699. (812.66)	40998. (1160.94)	53298. (1509.22)	65597. (1857.51)	81997. (2321.88)	
2 COMBINED	2 1410.00 (3651.88)		1 10399. (404.38)	28699. (812.66)	40998. (1160.94)	53298. (1509.22)	93745. (2654.55)	196555. (5565.83)	
ROUTED TO	3 1410.00 (3651.88)		1 12359. (349.90)	21627. (612.42)	30698. (874.89)	40165. (1137.35)	69218. (1960.05)	127001. (3597.97)	
HYDROGRAPH AT	3 256.00 (663.04)		1 9940. (261.46)	17394. (492.55)	24849. (733.64)	32303. (914.73)	39758. (1125.62)	49698. (1407.28)	
2 COMBINED	3 1666.00 (4314.92)		1 16252. (510.84)	31941. (904.46)	45630. (1292.09)	59319. (1679.72)	73180. (2072.23)	135829. (3846.26)	
ROUTED TO	4 1666.00 (4314.92)		1 16252. (510.84)	31941. (904.46)	45630. (1292.09)	59319. (1679.72)	73180. (2072.23)	135829. (3846.26)	
HYDROGRAPH AT	4 260.00 (673.40)		1 12816. (362.92)	22429. (635.11)	32041. (907.30)	41653. (1179.49)	51266. (1451.68)	64082. (1814.61)	
HYDROGRAPH AT	4 215.00 (556.85)		1 8639. (250.29)	15468. (438.01)	22098. (625.73)	28727. (813.45)	35356. (1001.17)	44195. (1251.47)	
HYDROGRAPH AT	4 71.00 (183.89)		1 4854. (137.44)	8494. (240.53)	12134. (343.61)	15775. (446.69)	19415. (549.77)	24269. (687.22)	
HYDROGRAPH AT	4 187.00 (484.33)		1 6326. (179.12)	11070. (313.47)	15814. (447.81)	20558. (582.15)	25303. (716.49)	31628. (895.61)	
5 COMBINED	4 2399.00 (6213.38)		1 43565. (1233.62)	76239. (2158.84)	108913. (3084.06)	141586. (4009.28)	174260. (4934.49)	217825. (6168.12)	
ROUTED TO	5 2399.00 (6213.38)		1 39945. (1131.13)	69905. (1979.48)	99864. (2827.82)	129623. (3676.17)	160126. (4534.26)	205943. (5831.66)	
HYDROGRAPH AT	5 61.00 (157.99)		1 4987. (141.21)	8727. (247.12)	12467. (353.03)	16207. (458.94)	19947. (564.65)	24934. (706.06)	
2 COMBINED	5 2460.00 (6371.37)		1 40435. (1144.99)	70761. (2003.73)	101087. (2862.47)	131414. (3721.22)	162084. (4589.70)	208074. (5891.99)	

APPENDIX D

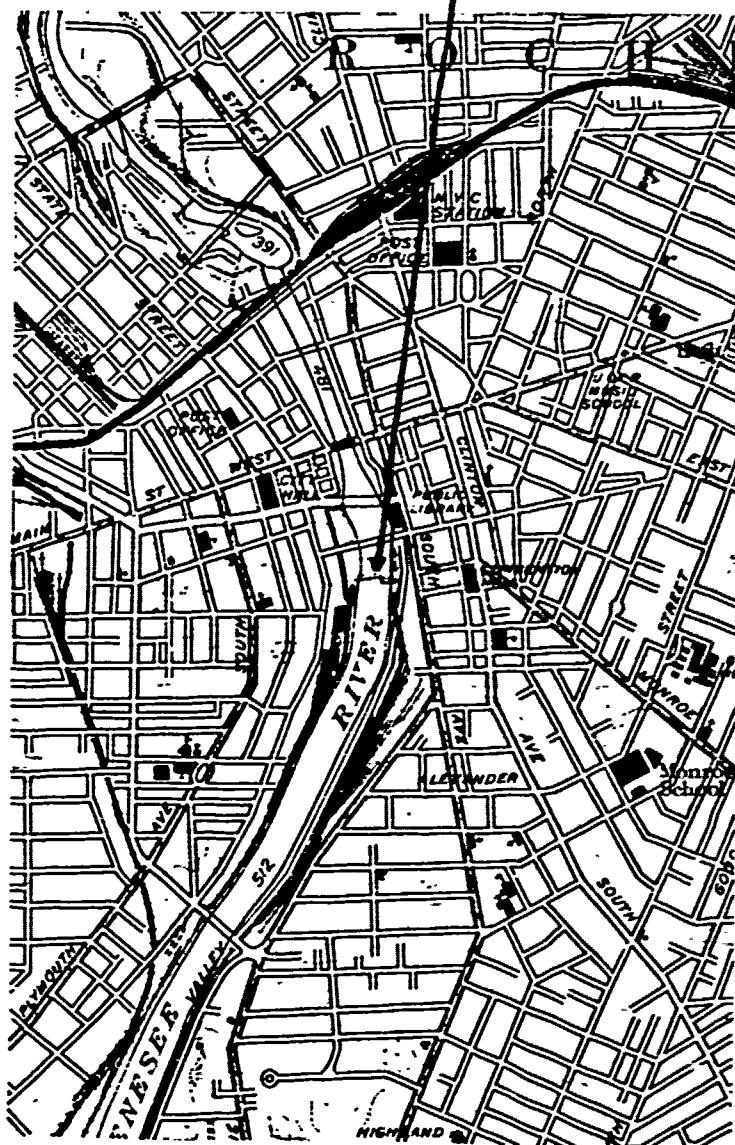
DRAWINGS

DAM SITE

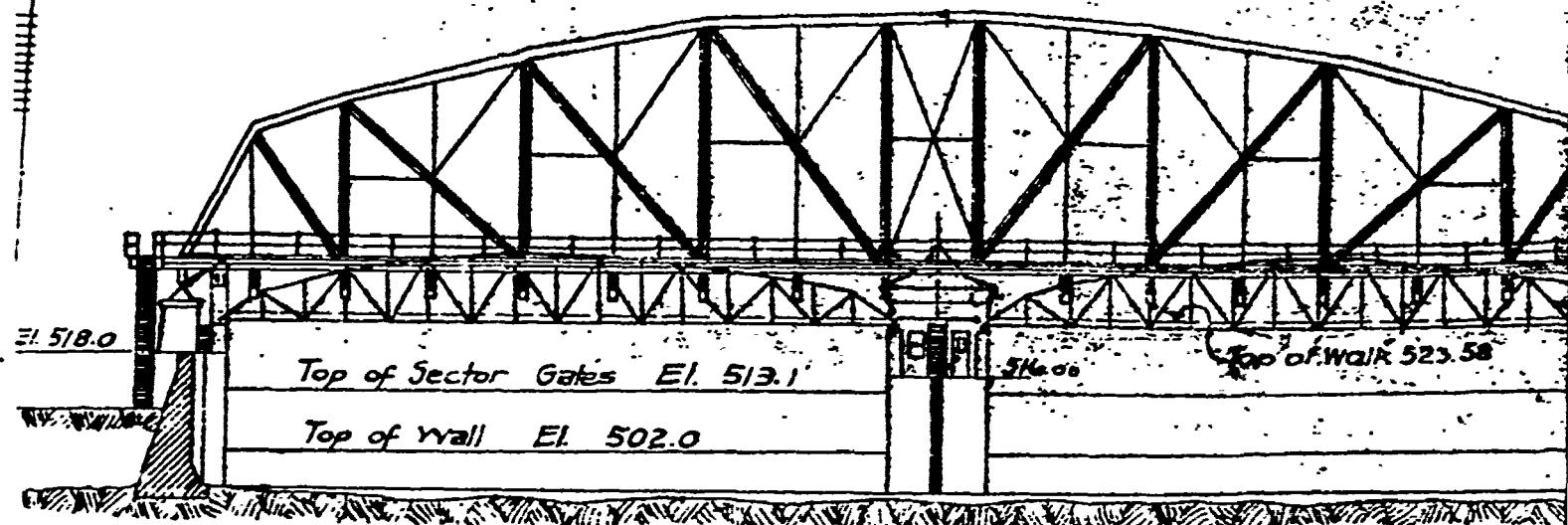


VICINITY MAP
COURT STREET DAM
I.D. NO. N.Y. 683

DAM SITE



TOPOGRAPHIC MAP
COURT STREET DAM
I.D. NO. N.Y. 683



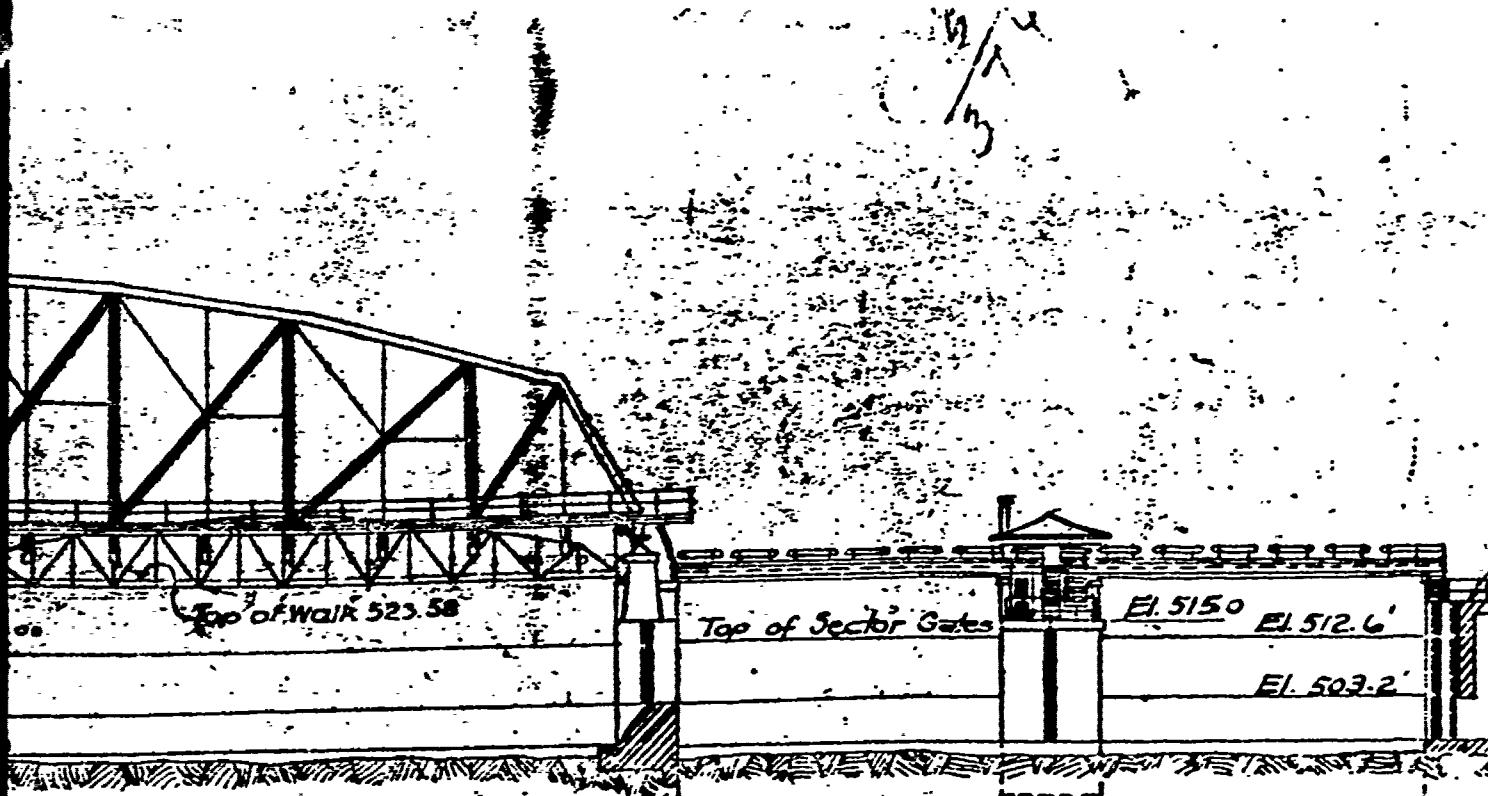
From Drawings Entitled:

ROCHESTER GAS AND ELECTRIC
PROPOSED LOCATION FOR
SECTOR TYPE CONTROL
GATES AT COURT STREET
BARGE CANAL HARBOR

ELEVATION (LOOKING DOWNSTREAM)
Scale 1" = 30'

NOTICE
(E)
DATE
(E)
DATE

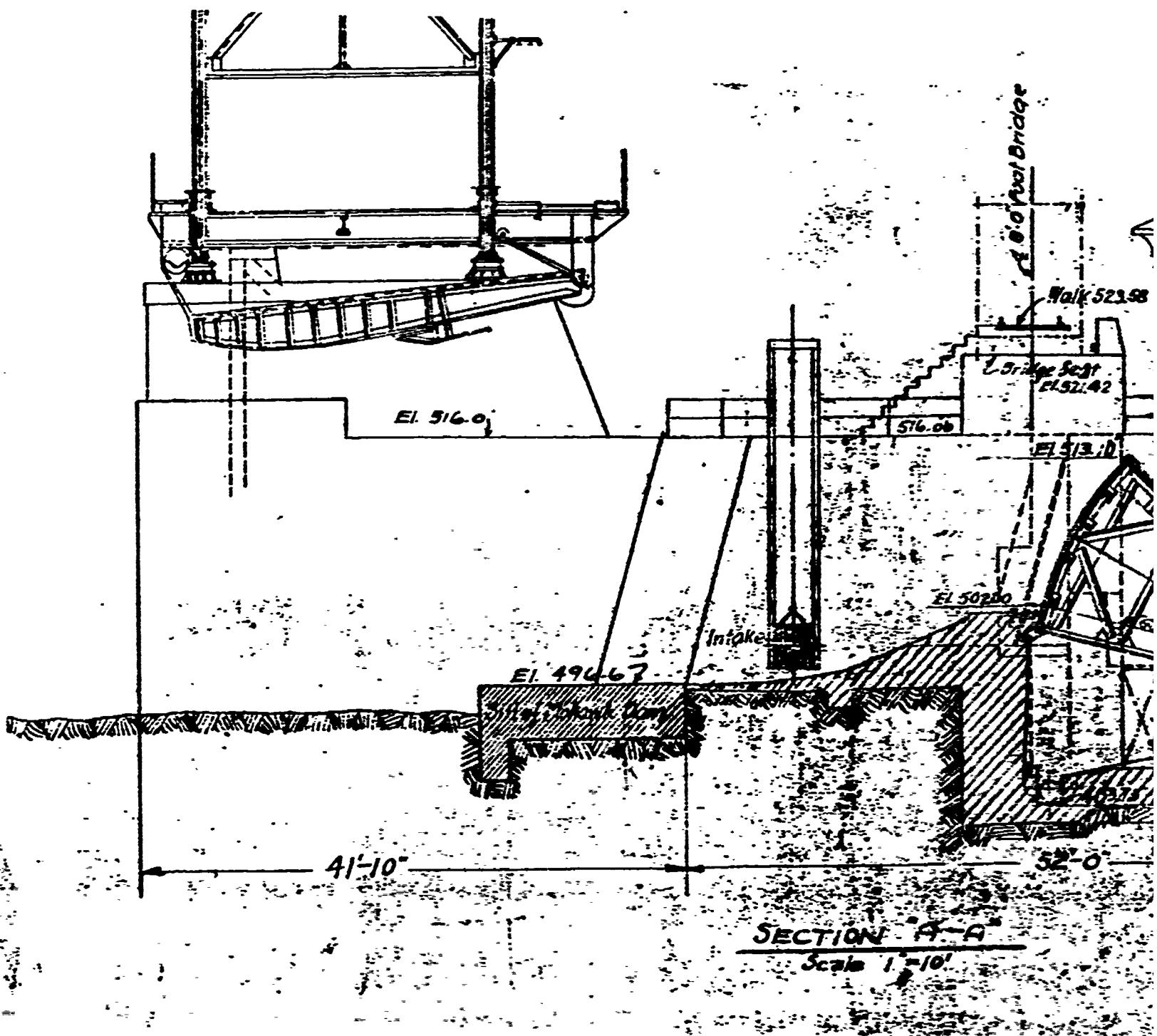
2



(LOOKING DOWNSTREAM)

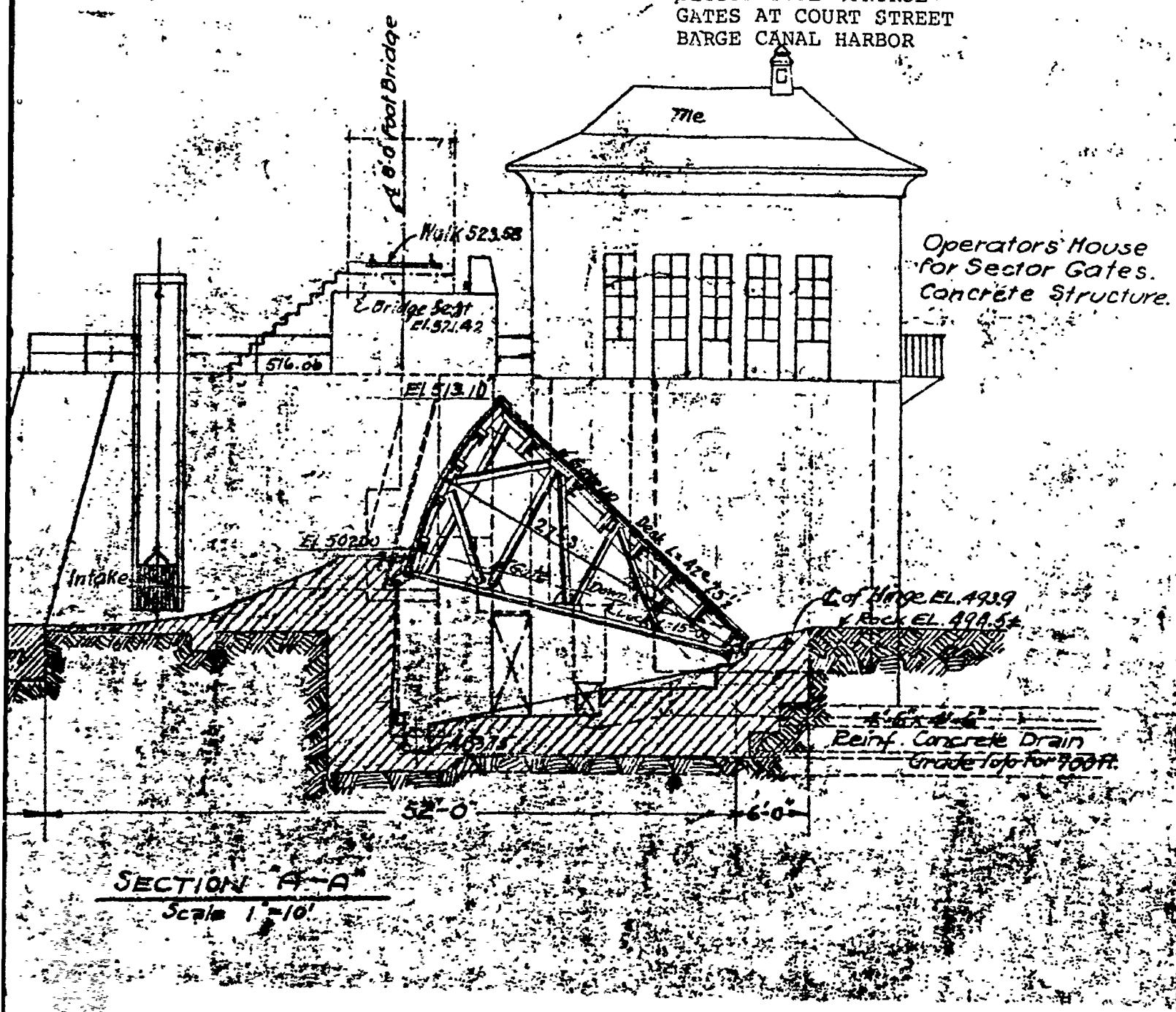
Scale 1" = 30'

NOTICE: REVISIONS - RETURN TO DRAFTING DEPARTMENT ALL PRINTS SINCE					
(E)			(C) Rock E1, Excavation & Foundation Lines, corrected on Sec 2 A-A.	(A) Elevation	Sec 2 A-A
DATE	O.K. 11/11/26	REVISER	DATE 5-3-26 O.K. 11/11/26	DATE 8-26	
(F)			(D) Corrected According to Details on Construction Drawings	(B) Elevation	26
DATE	O.K. 11/11/26	REVISER	DATE 12-19-26 O.K. 11/16-666	DATE 9	



From Drawings Entitled:

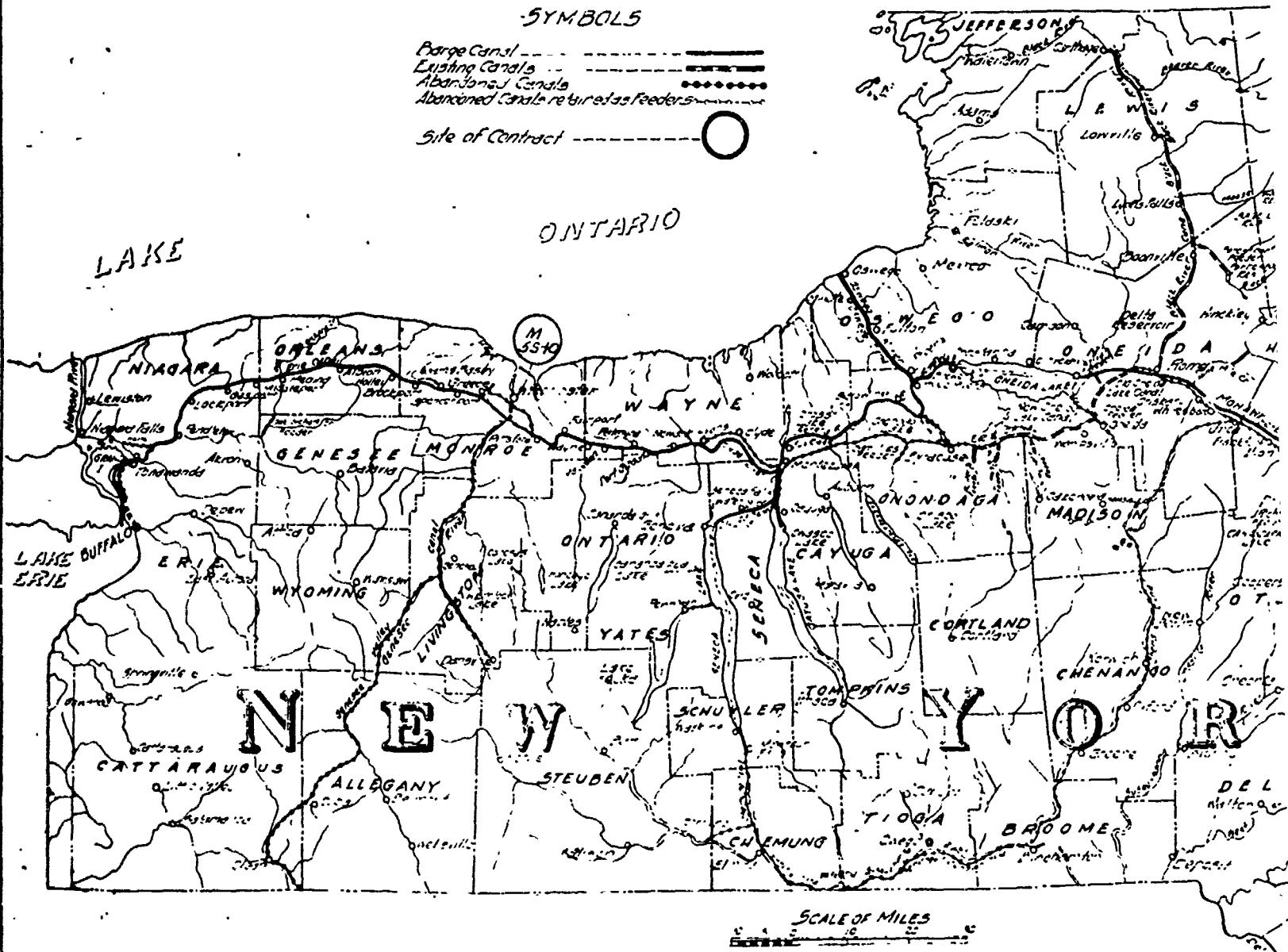
ROCHESTER GAS AND ELECTRIC
PROPOSED LOCATION FOR
SECTOR TYPE CONTROL.
GATES AT COURT STREET
BARGE CANAL HARBOR



SYMBOLS

Barge Canal - - - - -
 Existing Canals - - - - -
 Abandoned Canals - - - - -
 Abandoned Canals re-buried as feeders - - - - -

Site of Contract - - - - -



Approved..... 19

Deputy Ct. of Engineer
 Department of Public Works

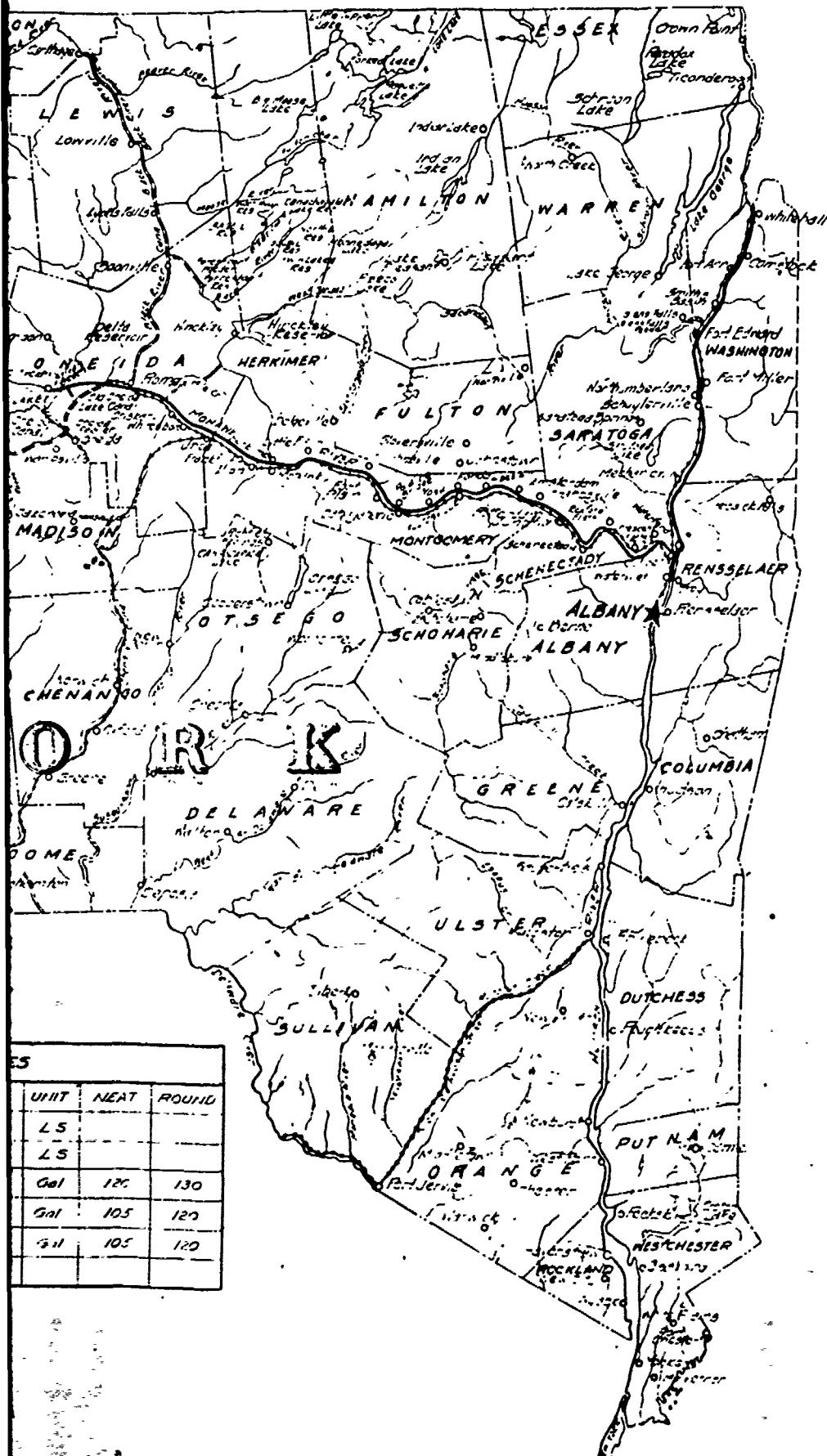
Approved for the State of New York
 Date..... 19

Superintendent of Public Works

Prepared pursuant to the Canal Law
 Approved 1958

B. F. Perry, District Engineer, Dist 11A

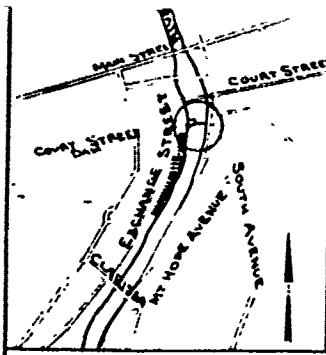
ESTIMATE OF QUANTITIES				
IT	ITEM	UNIT	NEAT	ROUND
821	Cofferdams	LS	-	-
210	Sandblasting and Cleaning Steel	LS	-	-
211	Furnishing and Assembling Red Miner Paint	Gal	120	130
212	Furnishing and Assembling 20" Coal Gray Paint	Gal	105	120
213	20" x 10' x 10' and Assembling 30' Gal. Metal Paint	Gal	105	120



Datum:

The elevations shown on this contract are referred to Barge Canal Datum. This column is based on the Greenbush Bench Mark. The established elevation of the Greenbush Bench Mark referred to Barge Canal Datum is 14720 feet.

STATE OF NEW YORK
 DEPARTMENT OF PUBLIC WORKS
 DIVISION OF CONSTRUCTION
 CHAPTER 542 LAWS OF 1939
 CONTRACT M 58-10
 FCR
 CLEANING AND PAINTING
 SECTOR GATE NO. 3
 COURT STREET DAM
 ROCHESTER, MONROE COUNTY
 NEW YORK
 SHEETS 1 TO 3 INC
 SCALES AS INDICATED



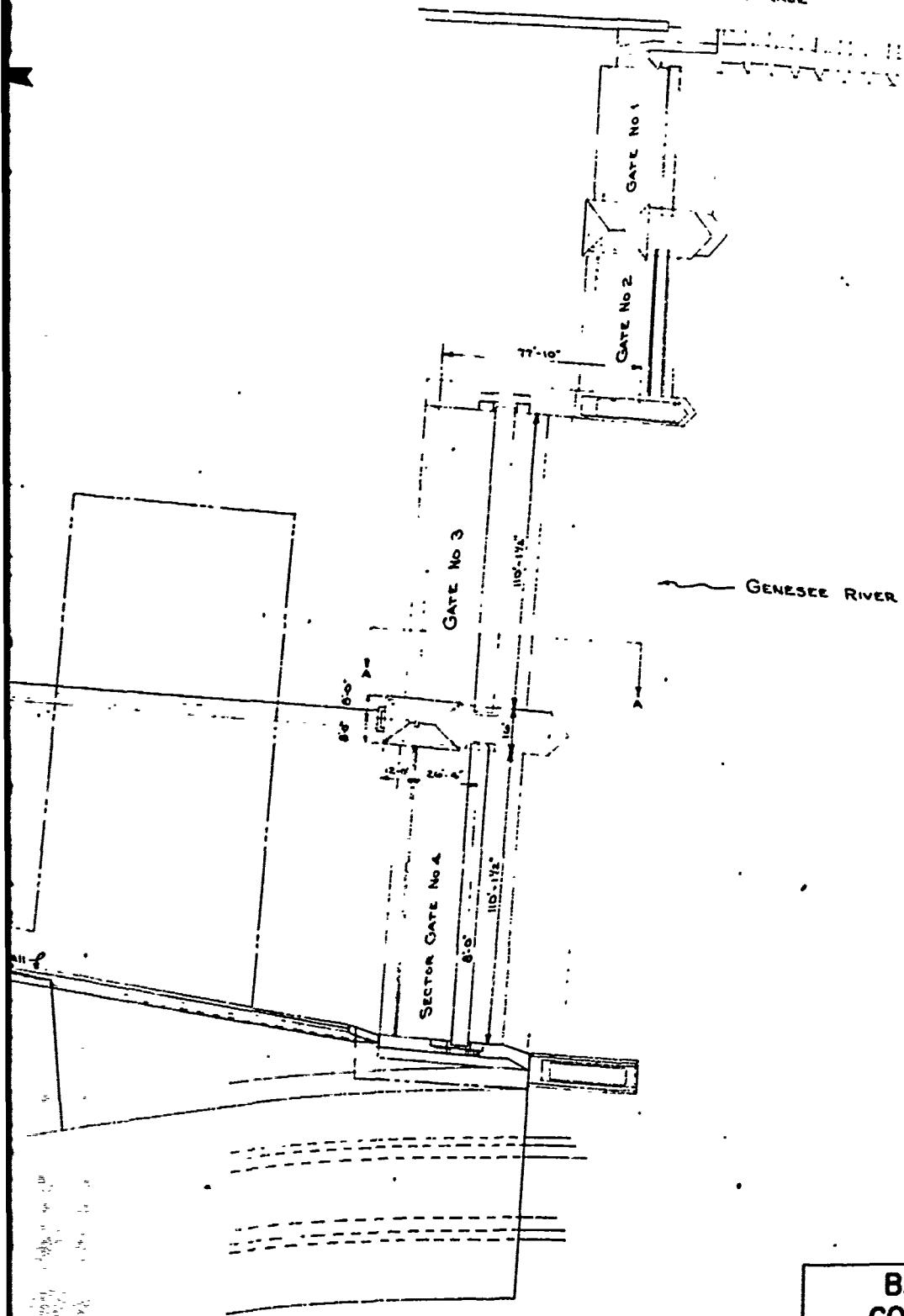
COURT STREET

GENESEE RIVER

DRAINAGE TUNNEL

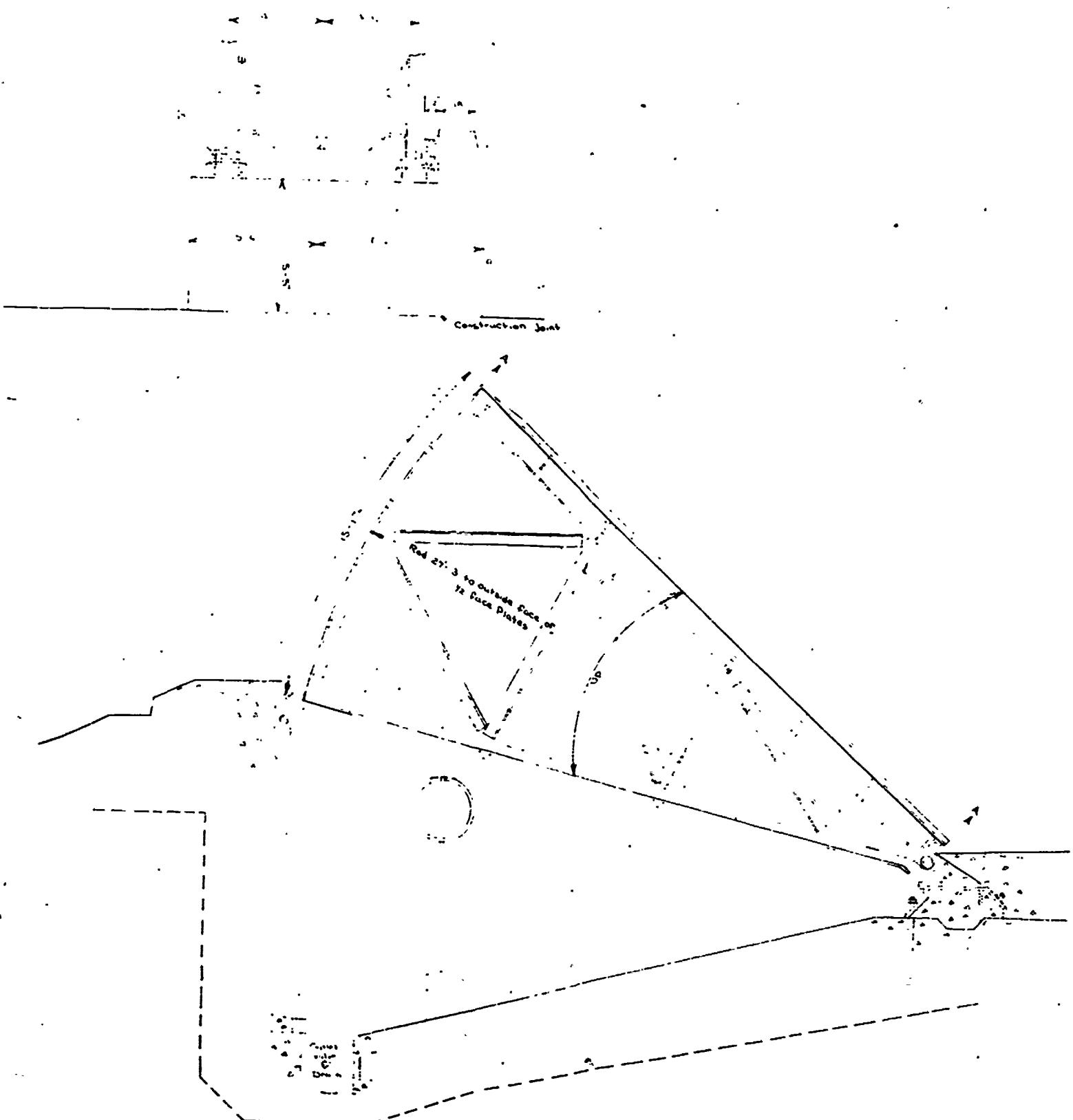
West River Wall

JOHNSON & SEYMOUR RACE

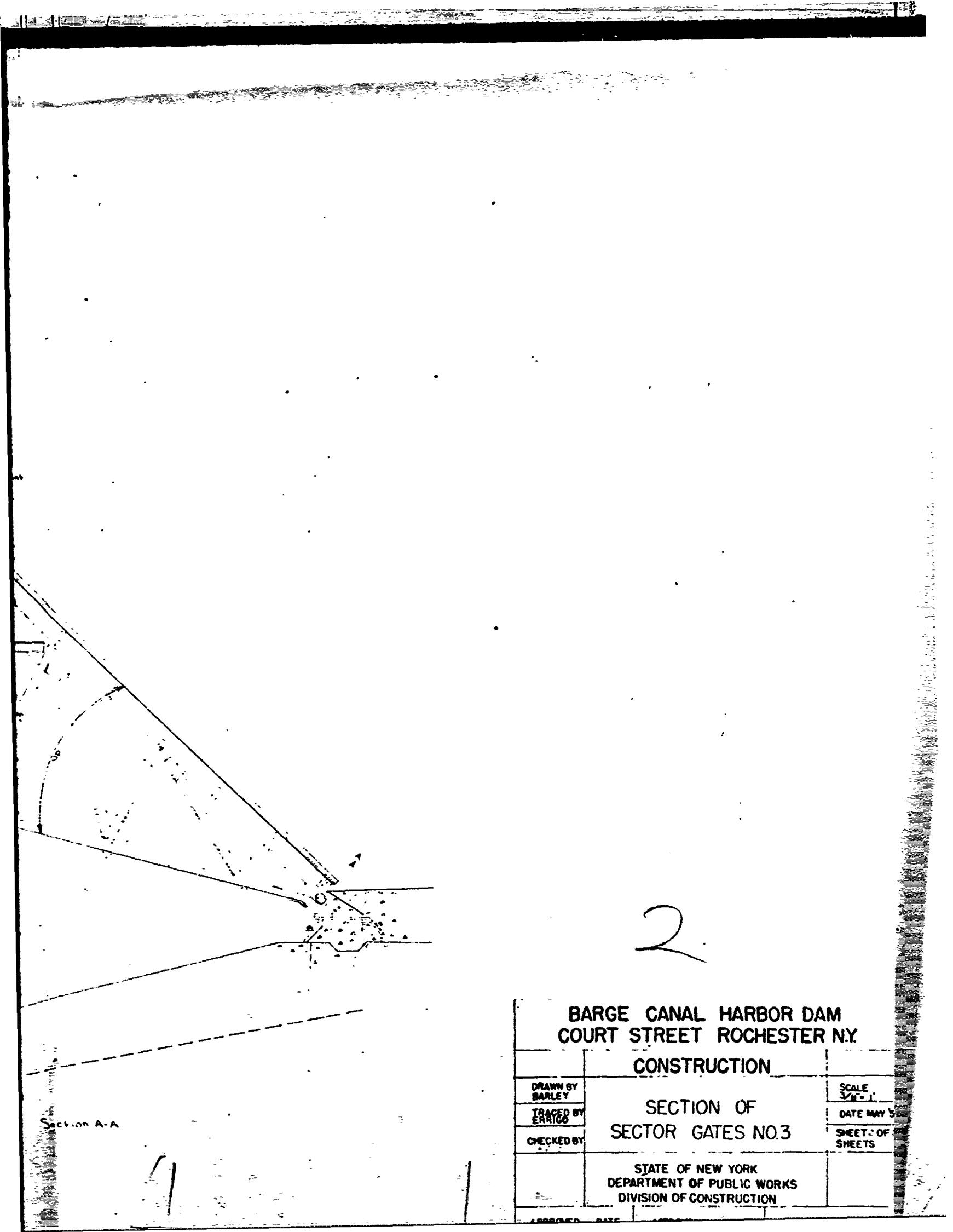


BARGE CANAL HARBOR DAM
COURT STREET ROCHESTER N.Y.

CONSTRUCTION		SCALE 1" = 30' DATE MAY 3 SHEET 1 OF SHEETS
DRAWN BY BARLEY	LOCATION PLAN FOR PAINTING SECTOR GATE NO. 3	
TRACED BY ERRIGO		
CHECKED BY R. J. C.		
	STATE OF NEW YORK DEPARTMENT OF PUBLIC WORKS DIVISION OF CONSTRUCTION	



Section A-A



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BARGE CANAL HARBOR DAM
COURT STREET ROCHESTER N.Y.
CONSTRUCTION

DRAWN BY BARLEY	SECTION OF SECTOR GATES NO.3	SCALE 3/4" = 1'
TRACED BY ERRICO		DATE MAY 5
CHECKED BY		SHEET 1 OF SHEETS
	STATE OF NEW YORK DEPARTMENT OF PUBLIC WORKS DIVISION OF CONSTRUCTION	
APPROVED DATE		